xilence 25

EN IT

Brand of XAL Group

The power of silence

EN A quiet environment is a basic human need. Yet we are usually exposed to a cacophony from morning to night – from the alarm clock to the buzz of conversation in modern open-plan offices. At the workplace, the quality of the room acoustics is cited as one of the most important factors for well-being. Studies have shown that the acoustics of a room influence both productivity and the general quality of interaction and health. Our goal is to create spaces where people feel relaxed, safe, and productive. This is why we have developed a product portfolio that harmoniously combines lighting and room acoustics. Acoustic lighting creates ideal light conditions and a balanced acoustic environment that enhances concentration, promotes social interaction, and creates a sense of well-being. **The power of silence.**

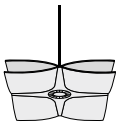
IT La quiete è una necessità umana fondamentale. Eppure siamo esposti continuamente a una commistione di rumori di fondo, dal suono della sveglia la mattina al mormorio delle conversazioni nei moderni uffici open space. Nei luoghi di lavoro l'acustica viene considerata uno dei fattori più importanti per il benessere psicofisico. Infatti, gli studi dimostrano che incide sia sulla produttività che sulla salute, nonché sulla qualità della vita in società. Il nostro obiettivo è creare spazi nei quali le persone si sentano rilassate, al sicuro e produttive. Ecco perché abbiamo sviluppato una gamma di prodotti che unisce illuminazione e acustica in maniera armoniosa. Le condizioni luminose e sonore ottimali garantite dall'illuminazione acustica favoriscono la concentrazione, le interazioni sociali e il benessere in generale. **Il potere del silenzio.**

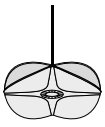
Acoustic lighting

SOUND-CATCHER
suspended


sharp square **42**


sharp octo **42**

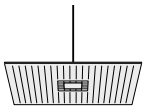

soft square **42**


soft round **42**

40

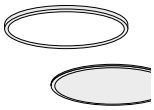
NEVA
suspended

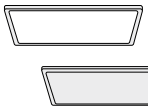

disc **50**


panel **54**

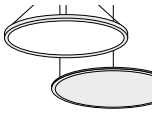
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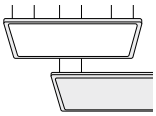
TASK
surface


acoustic round **60**


acoustic square **64**

suspended

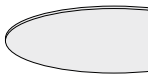

acoustic round **60**


acoustic square **64**

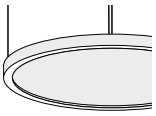
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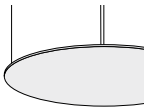
MINO CIRCLE
ceiling


luminaire & acoustic **70**


acoustic **70**

suspended

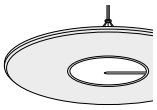

luminaire & acoustic **70**

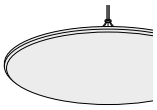

acoustic **70**

68

SONIC
suspended

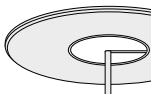

luminaire & soundcap **78**


luminaire & absorber ring **78**


absorber disc **78**

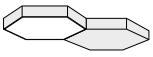
free standing


luminaire & soundcap **78**


luminaire & absorber ring **78**

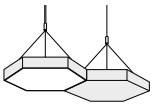
76

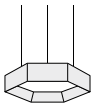
HEX-O
ceiling


luminaire & acoustic module **86**


luminaire with absorber **86**

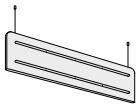
suspended

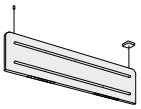

luminaire & acoustic module **88**

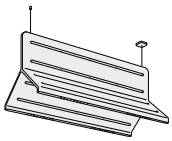

luminaire with absorber **88**

84

MUSE
acoustic suspended

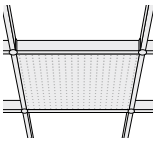

baffle **96**

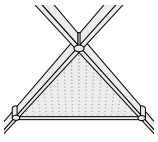

light **96**

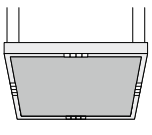

double light **96**

94

MOVE IT
suspended


acoustic grid **106**


acoustic triangle **106**


acoustic set **112**

102

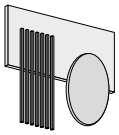
Acoustic elements

FRACTAL CODE
wall panel

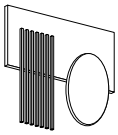


120

FELT
surface



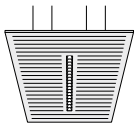
FELT 9
126



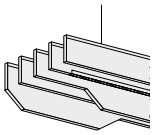
FELT 25
132

126

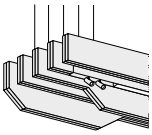
Customised solutions



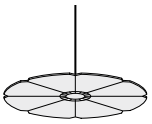
NEVA panel rectangular
140



baffle 25 system
144



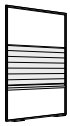
baffle 50 system
148



floral
154



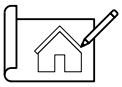
shades
158



working frame
160

Planning

Acoustic planning



162

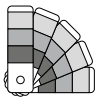
Know-how

Know-how



168

Colours



181

XALec
Graz, AT

Architecture by
INNOCAD Architektur ZT GmbH

BAFFLE 25 system
FRACTAL CODE
MOVE IT 45 system
MOVE IN
SOUNDCATCHER
TASK system

Fractal innovation

EN In the new offices at XAL Headquarters, fractal patterns on the wall panels mark a new era of biophilic design. These customised acoustic surfaces, based on research by 13&9 Design and Fractals Research, induce the quantified positive effects of natural patterns. Originally developed from NASA experiments on stress reduction, Prof. Dr. Richard Taylor and the ScienceDesignLab are working on stress-reducing solutions for working environments and healthcare. The fractal patterns for walls and glass cubes at XAL Headquarters continue this tradition of utilising the health benefits of nature. The patterns are generated by a computer programme developed by Prof. Dr. Richard Taylor and 13&9 Design for both indoor and outdoor use. In collaboration with the acoustic experts at xilence, the wall panels were customised for optimum effect inside the building. Studies show that fractal patterns can reduce stress levels by up to 60 per cent.

In addition to numerous lectures and awards, the studies have appeared as lead articles in the American scientific journal 'Nonlinear Dynamics, Psychology, and Life Sciences' as well as articles in PubMed Health and The Journal of Sustainability. The recently completed study 'Aesthetics and Psychological Effects of Fractal Based Design' was published in the internationally renowned journal Frontiers in Psychology.

IT I nuovi uffici della sede centrale di XAL sono allestiti con motivi frattali sui pannelli delle pareti, che segnano una nuova era del design biofilico. Queste superfici acustiche, realizzate su misura seguendo le ricerche dello studio 13&9 Design e Fractals Research, rendono tangibili gli effetti positivi dei motivi naturali. Facendo seguito ad esperimenti condotti dalla NASA sulla riduzione dello stress, il Prof. Richard Taylor e il ScienceDesignLab lavorano su soluzioni per abbassare lo stress negli ambienti di lavoro e nella sanità. I motivi frattali su pareti e cubi di vetro nella sede di XAL proseguono questa tradizione che vuole sfruttare i benefici della natura per la salute. I motivi sono generati da un programma informatico sviluppato dal Prof. Dr. Richard Taylor insieme allo studio 13&9 Design e si possono usare sia in interni che esterni. In collaborazione con gli esperti di acustica di xilence, i pannelli a parete sono stati personalizzati per trovare un effetto ideale all'interno dell'edificio. Gli studi dimostrano che i modelli frattali sono in grado di ridurre anche del 60 percento i livelli di stress.

Oltre a numerose conferenze e riconoscimenti, gli studi sono stati pubblicati come articoli di fondo nella rivista americana "Nonlinear Dynamics, Psychology, and Life Sciences" e come articoli in PubMed Health e The Journal of Sustainability. Lo studio "Aesthetics and Psychological Effects of Fractal Based Design", concluso di recente, è stato pubblicato sulla rivista di fama internazionale Frontiers in Psychology.





“One of the best findings from our psychological research is that short exposure to fractal patterns can help reduce stress levels by up to 60%.”

Prof. Dr. Richard Taylor, Head of Fractals Research and Co-Founder of ScienceDesignLab







XALec Graz, AT –
by INNOCAD Architektur ZT GmbH







MOONCITY
Salzburg, AT

Architecture by
Panek Architekten ZT GmbH

Interior Design by
Found, Lukas Lettner

BAFFLE 25 system
BASO 40
VARO 80 S

Lounge atmosphere

EN An interplay of light and dark, innovation and design. New energy: all day, all night. Progressive technology meets years of expertise, a warm atmosphere meets a stylish event space – like the two faces of the moon. MOONCITY Salzburg is the largest inner-city fast-charging park in Austria. Porsche Immobilien's requirement was to create a consulting environment with a feel-good ambience, with plenty of real wood and a pleasant atmosphere. The architects and interior designers were keen to create a place that makes the time spent charging an electric vehicle entertaining and enjoyable. To create a lounge atmosphere, the architects and interior designers paid particular attention to the acoustic measures.

The customised acoustic solution and the lighting solutions are characterised by a sleek and functional design that is seamlessly integrated into the overall concept.

IT Una trama di luci e ombre, innovazione e design. Un nuovo modo di fare rifornimento, 24 ore su 24, 7 giorni su 7. La fusione tra tecnologia avanzata e anni di esperienza, fra atmosfera rilassante e spazio eventi elegante, come le due facce della luna. La MOONCITY Salzburg è la stazione urbana di ricarica veloce più grande d'Austria. La società Porsche Immobilien intendeva creare un ambiente confortevole e accogliente per le consulenze, avente il legno come protagonista. Architetti e designer d'interni lo realizzano, progettando un luogo interessante e che rende piacevole i tempi di attesa per la ricarica dell'auto elettrica. Particolare attenzione è stata rivolta all'acustica, elemento decisivo per la creazione del clima lounge.

Una soluzione personalizzata che comprende sia acustica che illuminotecnica, caratterizzata da un design semplice e funzionale, perfettamente integrato nel concetto d'insieme.





“For the lighthouse project in the field of e-mobility, optimised acoustic and lighting solutions have been used to create an elegant, warm showroom ambience.”

Christian Panek, Panek Architekten ZT GmbH



Inter-pool Immobilien GmbH
Vienna, AT

Architecture by
Inter-pool Immobilien GmbH /
Architect DI Stephan Kopinits

MUSE double light

Acoustic performance in the office loft

EN Inter-pool, a specialist in office solutions and an exclusive real-estate service provider in Vienna, revitalised their own office. Acoustic measures were to be used to transform the large loft with particularly high ceilings and hard surfaces into an office with a feel-good factor that could also serve as a showroom for customers. MUSE double light above the desks was chosen to create both screen-compatible workplaces and to effectively absorb distracting noise. In addition, the acoustic desk elements, which were mounted in front of the desks, provide acoustic and visual privacy.

A particular challenge was posed by the load-bearing capacity of the fire protection ceiling. Thanks to the luminaires' low weight, all requirements could be met. The various lighting moods ultimately create a particularly pleasant atmosphere in the loft.

IT Inter-pool è una società che offre soluzioni per uffici e esclusivi servizi immobiliari a Vienna. I lavori di rinnovamento della sede aziendale hanno interessato in particolare l'acustica con l'obiettivo di trasformare l'ampia pianta e gli alti soffitti in un open space dall'elevato benessere, utilizzabile anche come showroom per l'accoglienza clienti. Le MUSE double light permettono di creare postazioni per il lavoro al computer nonché di assorbire i rumori disturbanti. In più, gli elementi frontali MUSE desk migliorano ulteriormente la resa acustica, garantendo nel contempo la privacy.

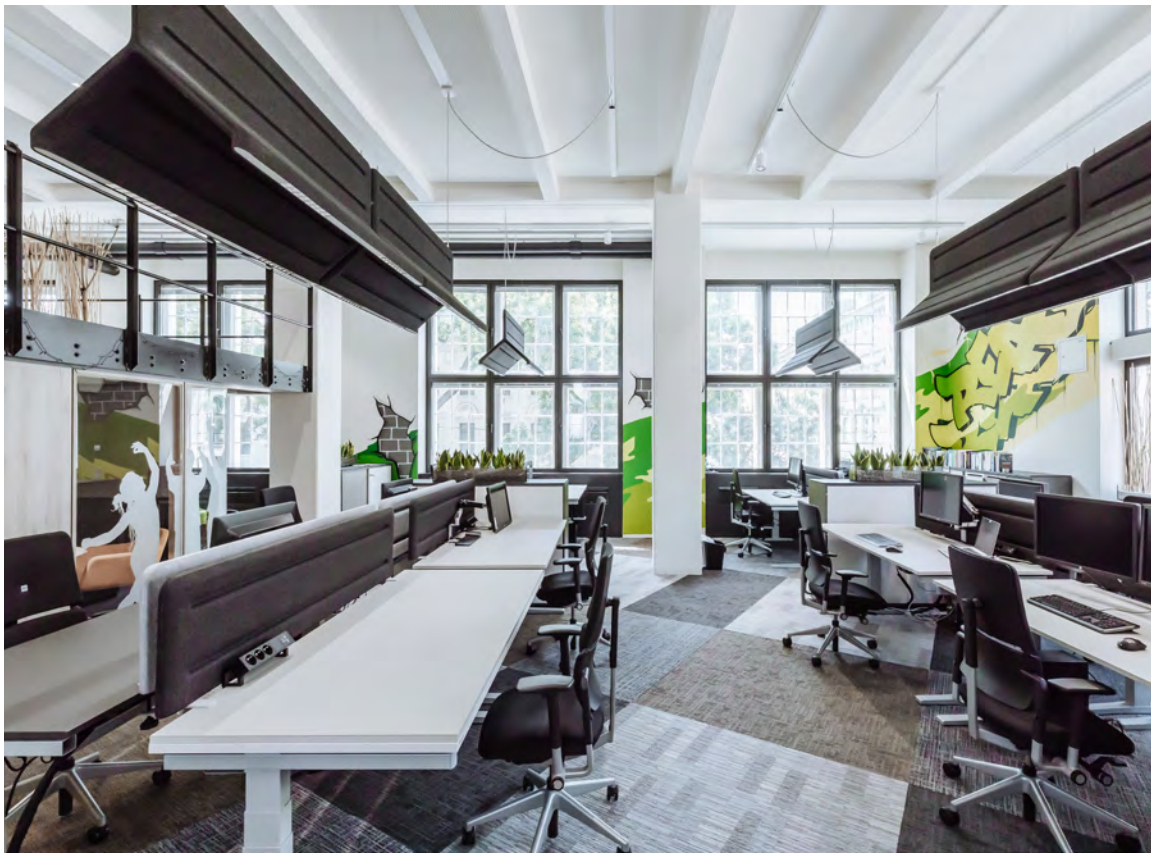
La capacità portante del soffitto antincendio rappresentava una vera e propria sfida. Grazie al peso ridotto degli apparecchi i requisiti di progetto sono stati soddisfatti. Diversi effetti luminosi possono essere impostati, rendendo l'atmosfera nel loft particolarmente piacevole.

Inter-pool Immobilien GmbH Vienna



“We are very satisfied with the result.
Both visually, acoustically and in terms of lighting
our expectations were more than exceeded.”

Bernhard Stolberg, Owner of Inter-pool Immobilien GmbH




OFFICE DESIGN
LOBBY DESIGN
Neufert
Fabrics
Fabrics

EANS Flight Control Centre
Harju County, EE

Architecture by
KAMP Arhitektid

HEX-O
FRAME

Friendly spaceship

EN Together with Moodne Valgustus, KAMP Arhitektid developed the lighting concept for the EANS Flight Control Centre. The customer's expectations of the lighting in the office and in the general areas such as corridors and the lobby were high. The interior and exterior design was to reflect the company's main focus of activity: air traffic control and management. Modern sound-reflecting surfaces such as glass walls were used in the office area, exposed concrete and white terrazzo floors in the lobby – a particular challenge for the room acoustics.

The simplest solution would have been to glue acoustic panels to the ceiling, but the architects deliberately did not want to resort to the obvious solution. Instead, they opted for a light and acoustic system with a sculptural character, namely HEX-O. The design of the hexagonal HEX-O luminaires blended seamlessly into the black and white interiors.

IT Insieme a Moodne Valgustus, KAMP Arhitektid ha sviluppato il concetto di illuminazione per il Centro di Controllo Volo EANS. L'illuminazione negli uffici e negli spazi per la circolazione quali atrio e corridoi erano di fondamentale importanza per il cliente. Inoltre la progettazione di interni e esterni dovevano rispecchiare la principale attività aziendale, ovvero il controllo e la gestione del traffico aereo. Per garantire un'adeguata acustica ambientale sono stati utilizzati materiali fono-riflettenti: nella zona ufficio le pareti a vetro e nell'atrio il cemento a vista e i pavimenti in terrazzo bianco.

Il sistema più semplice sarebbe stato attaccare al soffitto dei pannelli acustici, ma gli architetti volevano evitare una soluzione così scontata. Quindi, scelgono un sistema luminoso e acustico dal carattere scultoreo, il HEX-O. Il design dalla forma esagonale si addice perfettamente agli interni black & white.




B 220
B 225

“As it turns out, the acoustics in the lobby is excellent, and there have been a few jazz concerts already.”

Peeter Loo, Architect / Partner, KAMP Arhitektid



EANS Flight Control Centre
Harju County, EE – by KAMP Arhitektid






B 106

E-Campus
Graz, AT

Architecture by
design studio zweithaler,
Benjamin & Markus Pernthaler

FELT 9 panel
LAMELLA system (customised)
BASO
BO
SASSO
VELA

Fusion of light and acoustics

EN Energie Steiermark's E-Campus in Graz is an impressive training centre for green energy. The canteen forms the social heart of the centre. The light-flooded room, characterised by views to the outside and a multifaceted zoning of the dining areas, is both a meeting place and a place of retreat. Room acoustics play a decisive role in the canteen, a place of lively communication. Sounds, such as clattering tableware or chairs being moved, reverberate off sound-reflecting surfaces producing excessive noise pollution. To nonetheless create a relaxing atmosphere, a system was developed in collaboration with design studio zweithaler to harmoniously combine acoustics and light.

The result is a visually appealing vertical and horizontal acoustic baffle system made of high-quality materials that is mounted between suspended tracks creating additional space for lighting: desk-specific spotlights are suspended between two horizontal baffles, while the cable of decorative suspended luminaires can run in the shadow gap of a vertical baffle. In the serving area, the horizontal acoustic elements perform as a mounting surface for large round luminaires and merge from the ceiling into a wall panel, further optimising the acoustics.

IT L'E-Campus der Energie Steiermark a Graz è un importante centro per la formazione sulle energie pulite. La mensa costituisce il cuore della vita sociale in azienda. L'ambiente illuminato dalla luce naturale, con scorci panoramici verso l'esterno e una variegata articolazione degli spazi interni, è il luogo ideale sia per incontrare le persone che per prendersi una pausa. L'acustica degli ambienti gioca un ruolo decisivo nella mensa, un luogo di vivace comunicazione. Tuttavia, i rumori delle stoviglie e delle sedie che si spostano vengono riflessi sulle superfici dure, aumentando l'inquinamento acustico. In collaborazione con il design studio zweithaler abbiamo sviluppato un sistema che unisce illuminazione e elementi fonoassorbenti, in grado di garantire un'atmosfera rilassante.

Il risultato è esteticamente interessante. Il controsoffitto, in materiale pregiato, è composto di lamelle fonoassorbenti montate su binari che creano un ulteriore spazio per la luce: fra quelle orizzontali i faretti a sospensione sono posizionati in corrispondenza dei tavoli, mentre fra quelle verticali corre il cavo delle lampade decorative. Nella zona ad uso refettorio, gli elementi acustici orizzontali fungono da supporto per gli apparecchi tondi che emergono tra i pannelli, ottimizzando l'acustica.









“The result goes beyond the technical requirements and becomes an expansive sculpture, an integral part of the interior.”

Benjamin & Markus Pernthaler, design studio zweithaler



Acoustic lighting

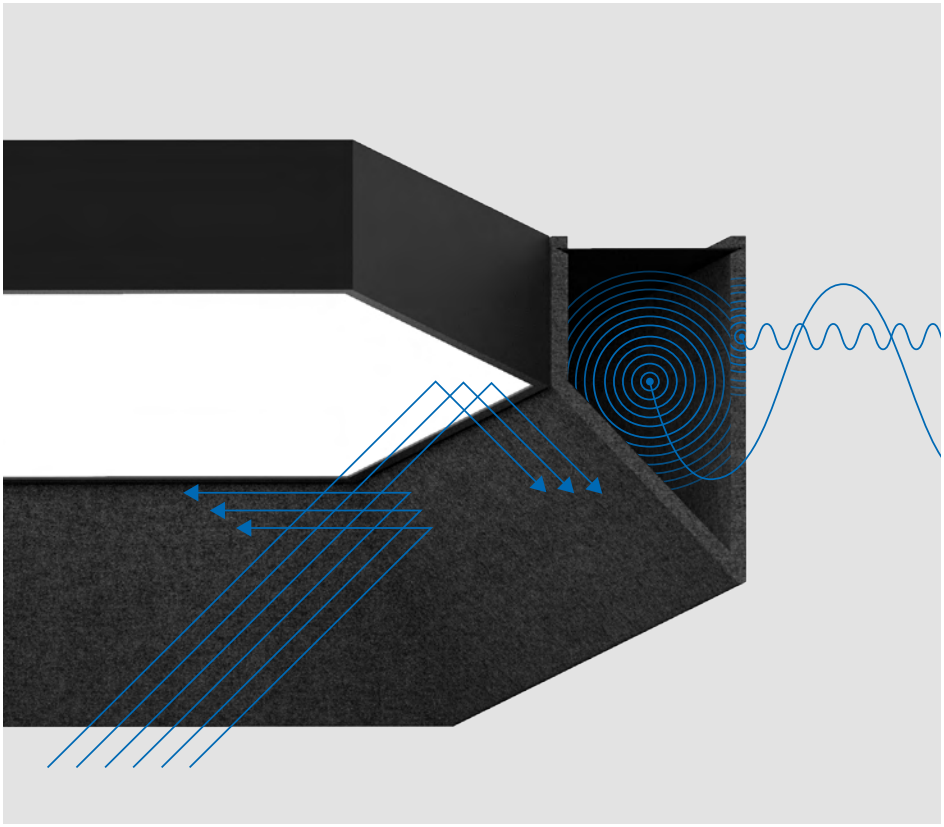




Designed for silence

EN Good room acoustics reduce harmful stress, promote concentration, and improve social interaction. Our highly effective acoustic elements absorb, screen, or diffuse sound, creating a noticeably pleasant acoustic environment. Choose from a wide range of acoustic products that blend in with your architecture or that you can use to actively design your space.

IT Una buona acustica ambientale riduce lo stress, favorisce la capacità di concentrazione e migliora l'interazione sociale. I nostri prodotti ad alta efficienza assorbono, schermano o diffondono il suono, creando un ambiente acusticamente più gradevole. È possibile scegliere tra una vasta gamma di prodotti, da armonizzare con le architetture esistenti o da utilizzare nella progettazione di nuovi spazi.





Experience in lighting

EN For more than 35 years, XAL has been developing state-of-the-art luminaires. The products not only offer excellent lumen-per-watt performance and are therefore highly efficient, but also ensure ideal working conditions at computer screens (UGR ≤ 19). By adjusting the colour temperature and light intensity, they support people's natural circadian rhythm. This promotes well-being, increases performance, and improves sleep quality. Integrated sensors automatically adjust the lighting to the room's use and ambient brightness, thus also saving energy.

IT Da oltre 35 anni XAL sviluppa apparecchi d'illuminazione all'avanguardia. I prodotti vantano non soltanto livelli straordinari di Lumen per Watt, ossia alta efficienza energetica, ma assicurano anche le migliori condizioni di lavoro al computer (UGR ≤ 19). Regolando la temperatura di colore e l'intensità della luce, sanno dare sostegno al naturale ritmo circadiano delle persone. Questo migliora il senso benessere, il rendimento e la qualità del sonno. I sensori integrati nell'illuminazione adattano automaticamente la luce alle attività svolte e alla luminosità circostante, consentendo di risparmiare ulteriore energia.

A perfect match

EN Design rooms in which lighting and room acoustics are perfectly matched. This creates a naturally pleasant atmosphere that promotes both well-being and concentration. By combining different products the way you like, you can create your own unique solution: from complete 2-in-1 acoustic luminaires, products that can be easily extended without the need for tools, or the strategic use of freely suspended acoustic elements – all in the matching design.

IT Progettiamo ambienti nei quali illuminazione e acustica risultano perfettamente calibrate. Il risultato è la creazione di un'atmosfera piacevole, capace di favorire sia il benessere che la concentrazione. Abbinando diversi prodotti è possibile ottenere una soluzione personalizzata: illuminazione e acustica in un solo elemento, con componenti integrabili di facile installazione oppure con l'utilizzo di pannelli acustici sospesi; il tutto in linea con la progettazione.





Precise acoustic planning

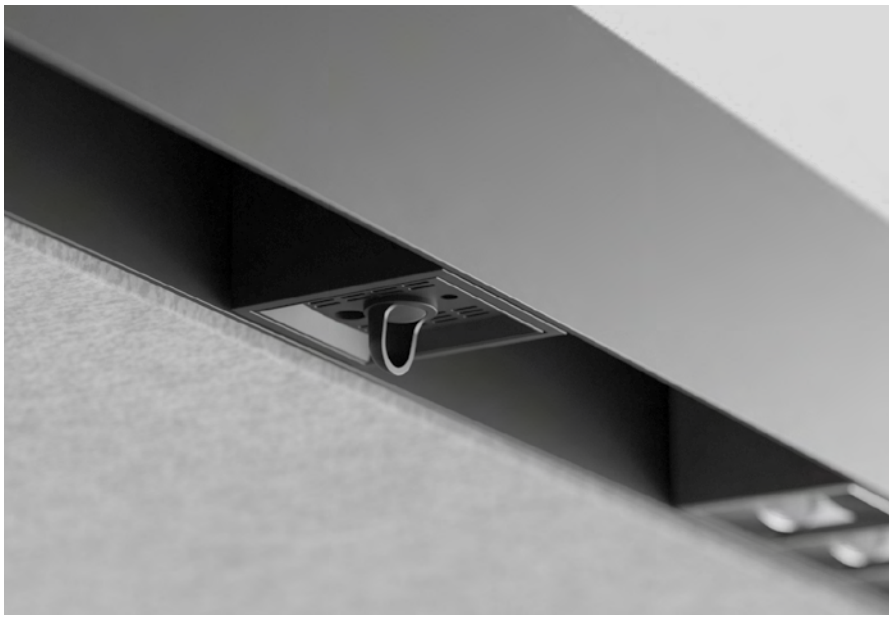
EN Whether you are building a new structure or acoustically retrofitting an existing one, our room acoustics experts can help you with the optimisation. Based on your plans, we will carry out a standardised calculation of the reverberation time and improve it using our acoustic solutions. Our focus is on creating an atmosphere in every room that is appropriate for its use and pleasant for those who use it. We would be happy to advise you – please do get in touch.

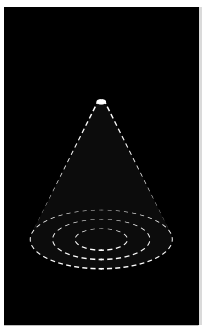
IT I nostri esperti sono pronti a offrirti tutto il supporto necessario negli interventi di ottimizzazione, sia per gli edifici di nuova costruzione che per i retrofit acustici. A partire dagli elaborati progettuali provvediamo al calcolo del tempo di riverbero e attraverso i nostri prodotti otteniamo il valore più appropriato. Il nostro obiettivo è creare l'atmosfera adatta all'utilizzo di ogni ambiente, rendendolo piacevole agli utenti. Saremo lieti di fornire la nostra consulenza – non esitare a contattarci.

Make it smarter

EN Can your acoustic lighting „think" to improve the quality of life in a room? Yes, it can: Equipped with smart-sensor technology, the lighting adapts to ambient brightness and room activity, for example. The SENSE sensor also measures values such as temperature, air quality, humidity, and noise level. Based on this data, the room's and work atmosphere can be noticeably improved and long-term energy savings achieved.

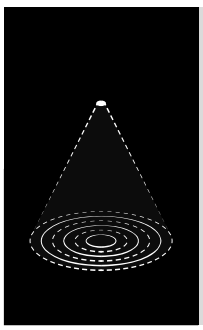
IT L'illuminazione acustica è in grado di "pensare" per migliorare la qualità della vita negli ambienti? Certo che sì. I nostri prodotti, dotati di una tecnologia basata su sensori intelligenti, si adattano alla luminosità ambientale e alle attività che si intendono svolgere. Il rilevatore SENSE misura valori quali la temperatura, la qualità dell'aria, l'umidità e il livello di rumore ambientale. Sulla base di tali dati è possibile migliorare sensibilmente l'ambiente di lavoro nonché garantire il risparmio energetico nel lungo periodo.





ESSENTIAL sensor

- brightness
- presence



SENSE sensor

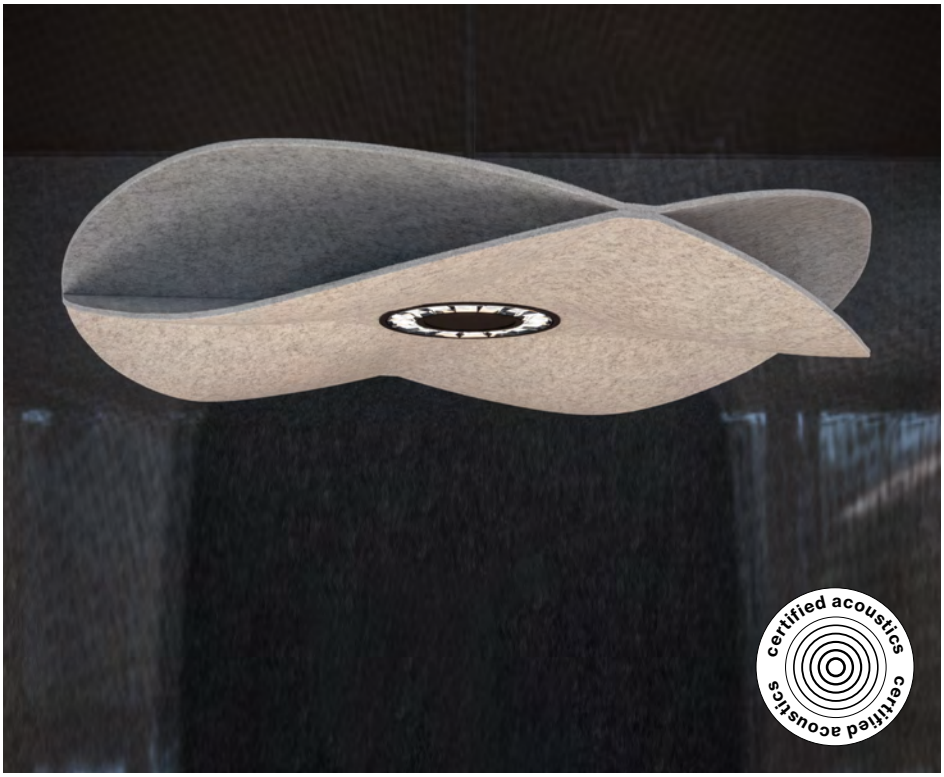
- brightness
- presence
- temperature
- humidity
- sound pressure
- CO_2



Local and sustainable

EN Our acoustic luminaires create a sustainably quiet and harmonised work environment. The acoustic elements are made of an innovative, precisely moulded, and high-quality synthetic fleece made from recycled PET. Local production close to the site ensures short transport routes. This makes our acoustic solutions a resource efficient and environmentally friendly choice in the long term.

IT I nostri sistemi dedicati all'acustica rendono l'ambiente di lavoro tranquillo e silenzioso. Si tratta di elementi sagomati con precisione, realizzati in tessuto sintetico innovativo, ottenuto da bottiglie PET riciclate. La fabbricazione avviene nelle immediate vicinanze e quindi i percorsi di trasporto sono brevi. Una scelta ecologica che dimostra l'efficienza dei nostri prodotti, in termini di impiego delle risorse e di una loro gestione razionale nel lungo periodo.



Real-life testing

EN For each product family, we carry out comprehensive acoustic measurements in a laboratory specifically certified for this purpose. We ensure that the conditions are as close to reality as possible to guarantee the best performance of our products on site.

IT Per ogni linea di prodotti conduciamo misurazioni acustiche presso un laboratorio certificato appositamente a questo scopo. Ci adoperiamo affinché le condizioni siano le più realistiche possibili, in modo da garantire migliori prestazioni.

Shaping sound and light



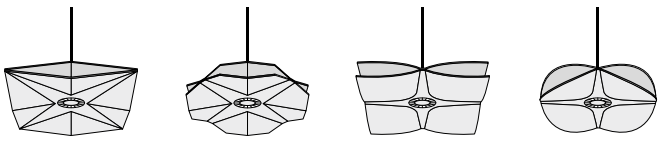
design by
13&9

SOUNDCATCHER

EN SOUNDCATCHER's unique design combines perfect, work-compatible light with efficient sound absorption and versatility in use. As a stand-alone design object, in an angular, round, or octagonal shape, it offers a fascinating new look from any viewing angle. As a modular system with or without integrated lighting, SOUNDCATCHER allows the creation of ceiling panels of different sizes for spatial zoning. The cavities between the layers effectively trap sound. These properties make SOUNDCATCHER the ideal solution for office, restaurant, and hotel projects, as well as for educational facilities.

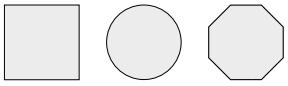
IT SOUNDCATCHER vanta un linguaggio formale unico che combina una luce perfetta per lavorare, un efficace assorbimento del suono e una grande versatilità nelle applicazioni. Si tratta di un originale oggetto di design in forma angolare, rotonda oppure ottagonale, tanto da presentarsi con un aspetto sempre nuovo e affascinante a seconda da dove lo si osservi. SOUNDCATCHER è un sistema modulare, con o senza illuminazione integrata, che permette di comporre pannelli a soffitto di varie dimensioni per suddividere gli spazi. Le intercapedini fra gli strati "catturano" efficacemente il suono. Queste proprietà fanno di SOUNDCATCHER la soluzione ideale per ambienti come uffici, ristoranti, hotel o strutture didattiche.

Types



sharp square suspended | sharp octo suspended | soft square suspended | soft round suspended

Acoustic sizes

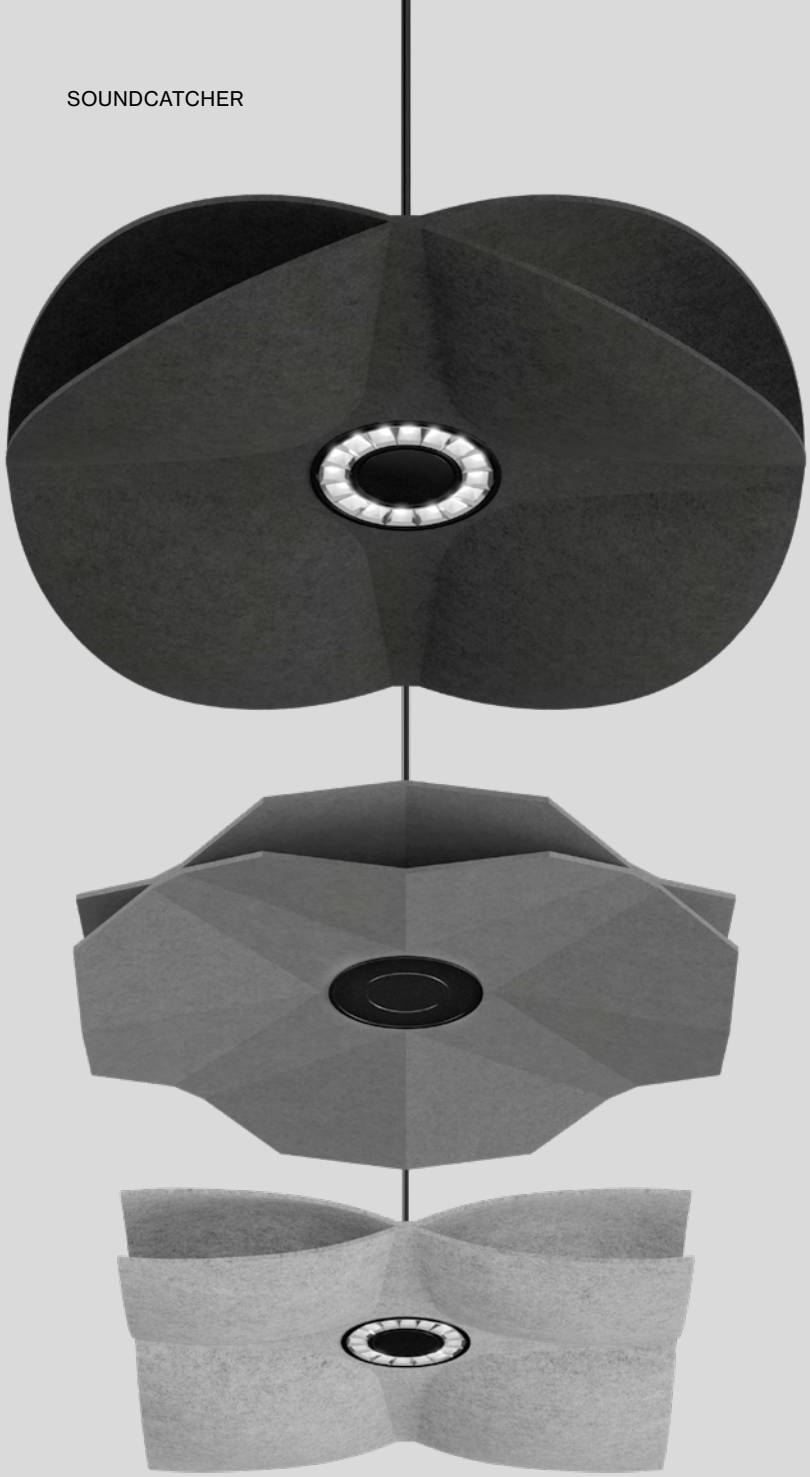


1000 1000 1000

Luminaire size



240



design by
13&9

SOUNDCATCHER

acoustic suspended

EN Acoustic element made of high quality, self-supporting, recycled PET felt with sound absorbing properties; in different moldings; constructed of two layers; choice of square, round or octagonal design; suitable for single or group installation; high quality visual and tactile surface; acoustically effective cavities; large sound absorbing surface; absorption of direct sound and sound reflected from the ceiling; this creates high acoustic performance; pendant fitting with MITA circle 240 acoustic suspended (LUMINAIRE or BLIND SUSPENSION); optionally with sensor (ESSENTIAL or SENSE)

IT Elemento acustico in feltro prodotto con PET riciclato di alta qualità, autoportante e con proprietà fonoassorbenti; in diverse forme; realizzato in due strati; forma a scelta tra quadrata, rotonda o rettangolare; adatti per montaggio singolo e a gruppi; finitura con caratteristiche estetiche e tattili di alta qualità; cavità efficaci a livello acustico; ampia superficie fonoassorbente; assorbimento del suono diretto e del suono riflesso dal soffitto; con elevata performance acustica; sospesa con MITA circle 240 acoustic suspended (LUMINAIRE o BLIND SUSPENSION); a scelta con sensore (ESSENTIAL o SENSE)

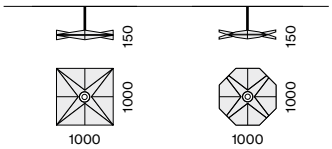
Quickinfo

PET felt
♻ from recycled material
up to absorption class A
suitable for workstations
flame retardant version available

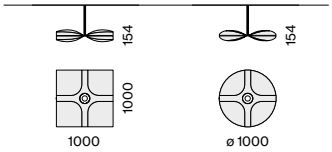
3000 K, 4000 K
CRI ≥ 80, 3 SDCM
UGR ≤ 19 / 65° ≤ 1500 cd/m²
up to 159 lm/W
L95 @ 50 000 h
DALI-2, ESSENTIAL, SENSE sensor
reflector (UGR ≤ 19)

Types

SOUNDCATCHER sharp



SOUNDCATCHER soft



Acoustic colours



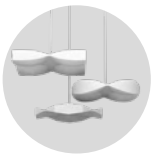
Luminaire colours



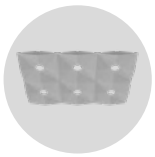
Light distribution



direct



acoustic volume



group mounting



four types in one size



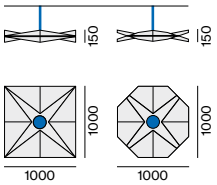
DIN EN 12464-1
UGR ≤ 19

Order options

ACOUSTIC COLOUR

marble grey	D
felt grey	G
anthracite	B

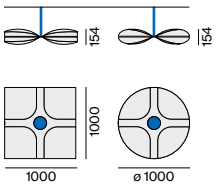
other colours on request



SOUNDCATCHER sharp

PET felt | A B C D E, α_w 0.90 | 0.90 NRC | 0.88 SAA

TYPE	L·W·H (mm)	ORDER CODE
square 1000	1000·1000·150	091-311120
octo 1000	1000·1000·150	091-311320



SOUNDCATCHER soft

PET felt | A B C D E, α_w 0.90 | 0.90 NRC | 0.88 SAA

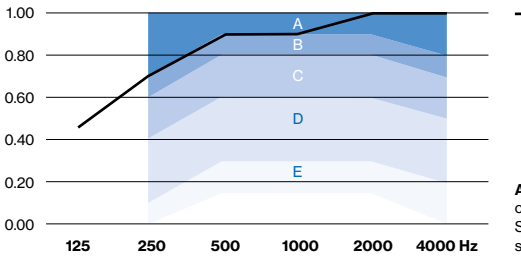
TYPE	L·W·H (mm)	ORDER CODE
square 1000	1000·1000·154	091-312120
round 1000	1000·1000·154	091-312220

Acoustic data

Equivalent sound absorption area (A_{eq})

TYPE	125	250	500	1000	2000	4000 Hz
sharp square	0.53	0.76	1.26	1.24	1.65	1.88
sharp octo	0.43	0.63	1.04	1.01	1.35	1.55
soft square	0.56	0.82	1.35	1.32	1.76	2.01
soft round	0.46	0.66	1.09	1.07	1.42	1.62

Sound absorption coefficient (α_p)



Acoustic data
calculations based on SOUNDCATCHER soft square 1000: cavity 40 cm

Order options

COLOUR TEMPERATURE

3000 K	5
4000 K	6

CONTROL

DALI-2	3
DALI-2 ESSENTIAL sensor (brightness & presence)*	B
DALI-2 SENSE sensor (brightness, presence, temperature, sound pressure, humidity, CO_2)*	P

*DALI-2 application controller needed

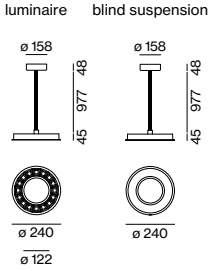
MATERIAL COLOUR

traffic white RAL 9016	7
jet black RAL 9005	8

REFLECTOR COLOUR

chrome	R
dark chrome	B

LUMINOUS FLUX value calculated for colour white, reflector chrome



MITA circle 240 acoustic suspended

UGR ≤ 19 | cd/m² ≤1500 | DALI 1 ADDR. | 220-240V | X-PERT | X-PERT

LUMINAIRE

SYSTEM POWER	COLOUR TEMP.	LUMINOUS FLUX	ORDER CODE
13.8 W	3000 K	1950 lm	091-3180
	4000 K	2160 lm	
16.3 W	3000 K	2270 lm	091-3181
	4000 K	2590 lm	

BLIND SUSPENSION

TYPE	ORDER CODE
240 round	091-319000

SYSTEM CONNECTOR

TYPE	ORDER CODE
set of two connectors	091-319100





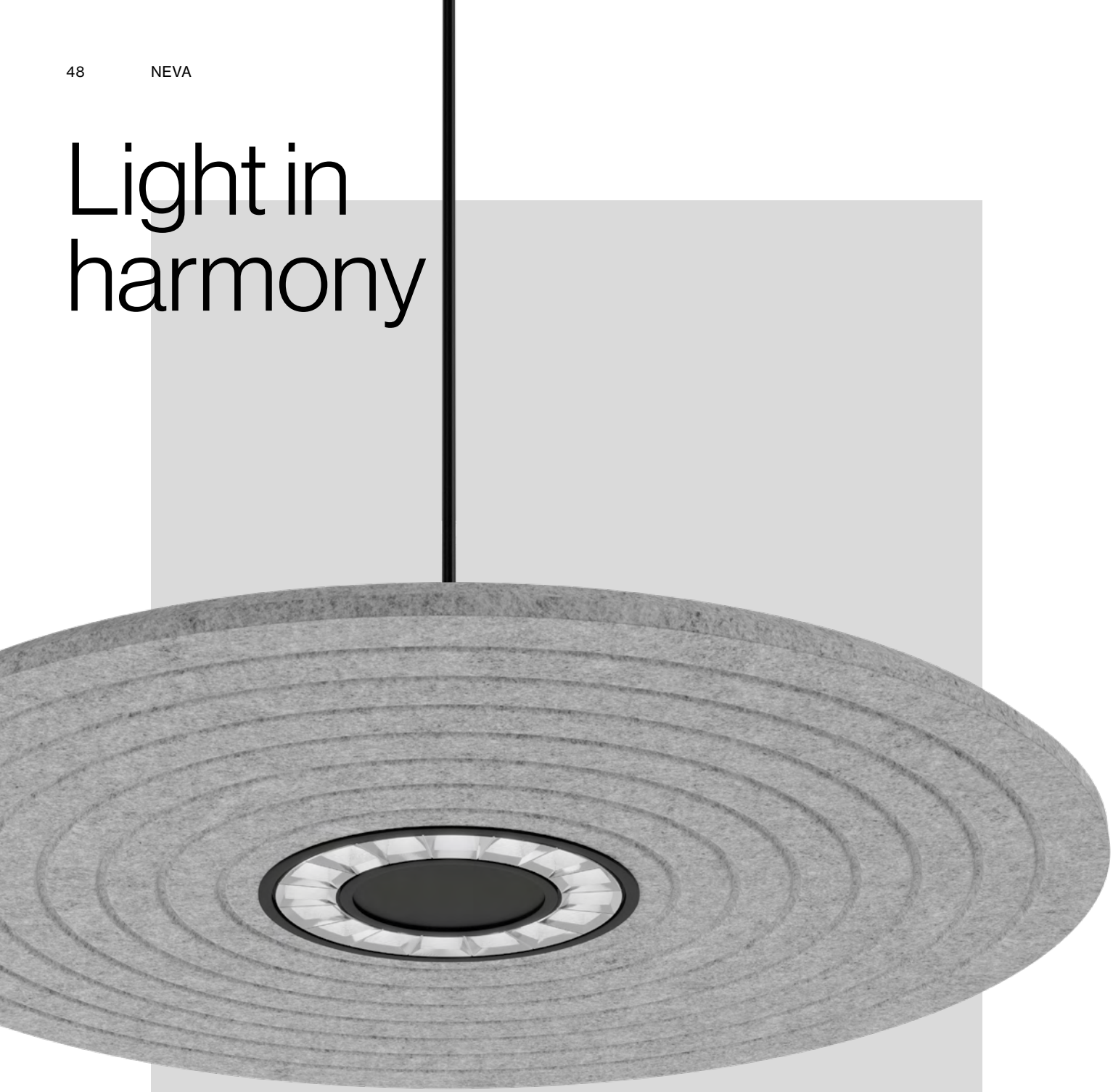
XALec Graz, AT –
by INNOCAD Architektur ZT GmbH







Light in harmony

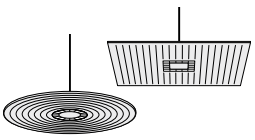


NEVA

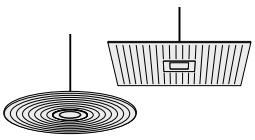
EN NEVA acoustic elements are characterised by their slim design and the high-quality embossed lines and circles on the surface, which give them a modern and appealing appearance. Be it with integrated lighting, as individual acoustic elements, or suspended in eye-catching clusters – NEVA offers a wide range of design options while always ensuring outstanding room acoustics. Various neutral colours enable harmonious integration into any interior, while glare-free reflectors provide ideal work light. This makes NEVA the perfect solution for stylish and functional interior design.

IT Elementi acustici sottili in materiale goffrato di alta qualità, con linee curve e rette dall'aspetto moderno e sorprendente. I pannelli NEVA possono essere utilizzati singolarmente, in serie o con illuminazione integrata, garantendo diverse composizioni e una straordinaria qualità acustica. Le tinte neutre si inseriscono facilmente in qualsiasi ambiente mentre i riflettori diffondono la luce senza abbagliare. Per un design funzionale e di stile.

Types

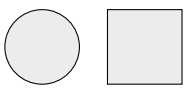


disc / panel
luminaire mounted



disc / panel
acoustic

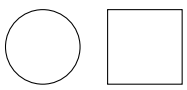
Acoustic sizes



800
1200

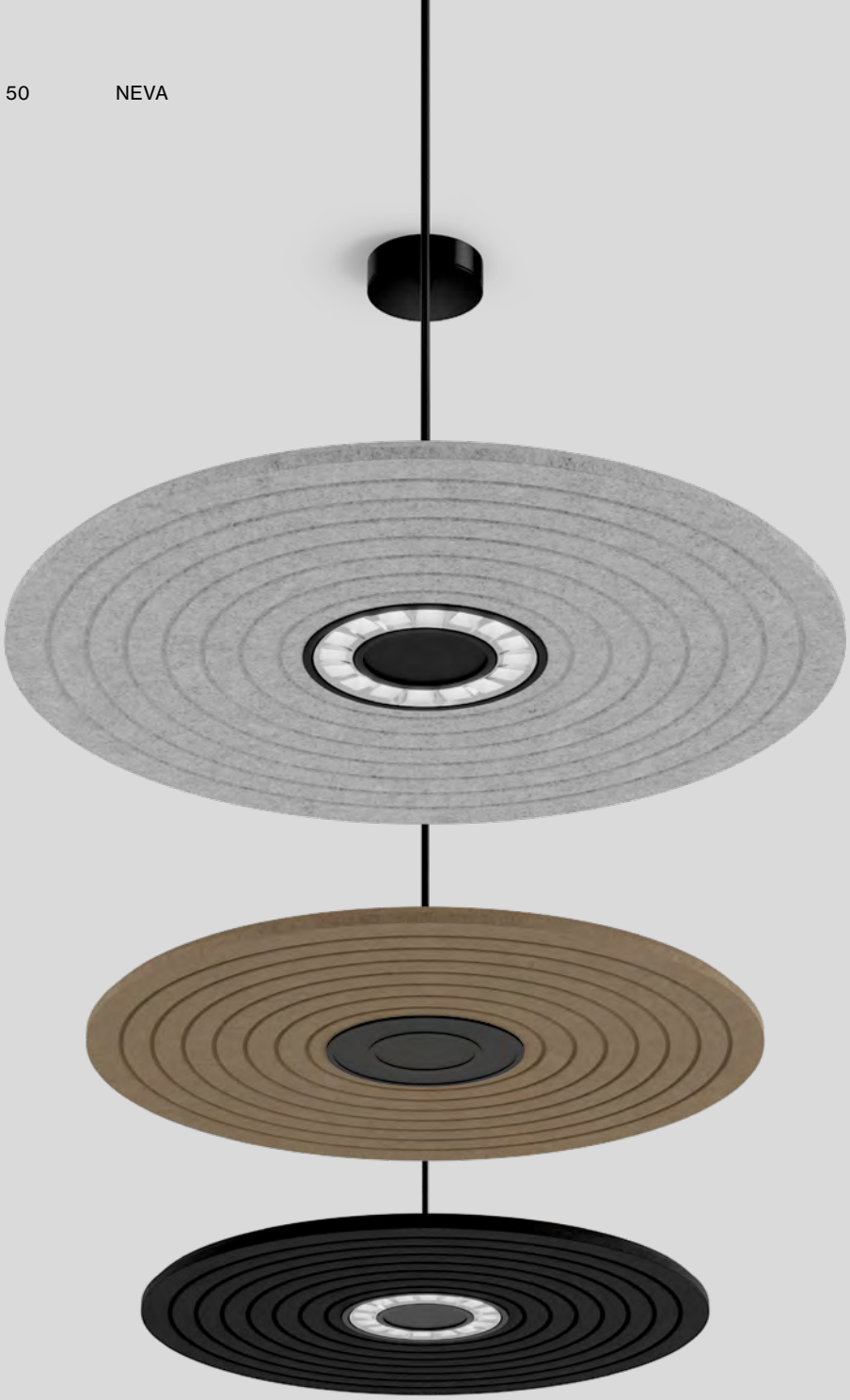
800
1200

Luminaire sizes



240

200

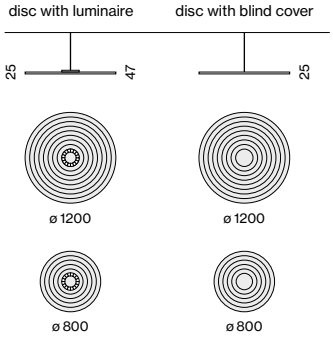


Quickinfo

PET felt
♻ from recycled material
up to absorption class A
suitable for workstations
flame retardant version available

3000 K, 4000 K
CRI ≥ 80, 3 SDCM
UGR ≤ 19 / 65° ≤ 1500 cd/m²
up to 159 lm/W
L95 @ 50 000 h
DALI-2, ESSENTIAL, SENSE sensor
reflector (UGR ≤ 19)

Types



Acoustic colours



Luminaire colours



Light distribution

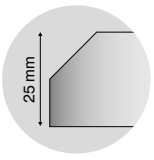


NEVA disc

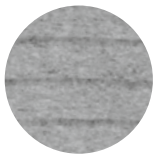
acoustic suspended

EN Acoustic element made of high quality, self-supporting, recycled PET felt with sound absorbing properties; round design; high quality visual and tactile surface with embossed pattern; absorption of direct sound and sound reflected from the ceiling; this creates high acoustic performance; pendant fitting with MITA circle 240 acoustic suspended (LUMINAIRE or BLIND SUSPENSION); optionally with sensor (ESSENTIAL or SENSE)

IT Elemento acustico in feltro prodotto con PET riciclato di alta qualità, autoportante e con proprietà fonoassorbenti; forma rotonda; superficie di alta qualità sia dal punto di vista ottico che tattile con motivo in rilievo; assorbimento del suono diretto e del suono riflesso dal soffitto; con elevata performance acustica; sospesa con MITA circle 240 acoustic suspended (LUMINAIRE o BLIND SUSPENSION); a scelta con sensore (ESSENTIAL o SENSE)



flat height
25 mm



embossed
acoustic panel



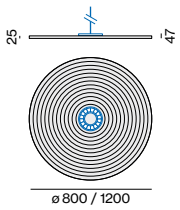
DIN EN 12464-1
UGR ≤ 19

Order options

ACOUSTIC COLOUR

○ white	W
marble grey	D
anthracite	B
● black	L
limestone	S

other colours on request



NEVA disc

PET felt | A B C D E, α_w 1.00 | 1.05 NRC | 1.02 SAA

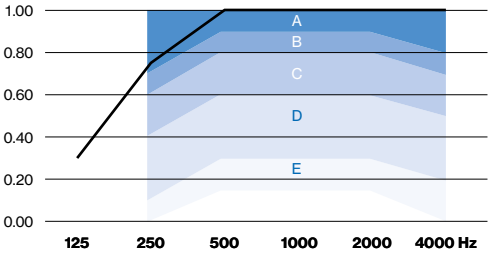
TYPE	Ø·H (mm)	ORDER CODE
800 disc	800·25	091-321110
1200 disc	1200·25	091-321210

Acoustic data

Equivalent sound absorption area (A_{eq})

TYPE	125	250	500	1000	2000	4000 Hz
800 disc	0.15	0.38	0.50	0.50	0.50	0.50
1200 disc	0.34	0.85	1.13	1.13	1.13	1.13

Sound absorption coefficient (α_p)



Acoustic data
calculations based on FELT 25 full plate: cavity 20 cm

Order options

COLOUR TEMPERATURE

3000 K	5
4000 K	6

CONTROL

DALI-2	3
DALI-2 ESSENTIAL sensor (brightness & presence)*	B
DALI-2 SENSE sensor (brightness, presence, temperature, sound pressure, humidity, CO_2)*	P

*DALI-2 application controller needed

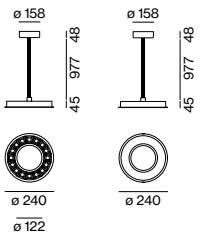
MATERIAL COLOUR

○ traffic white RAL 9016	7
● jet black RAL 9005	8

REFLECTOR COLOUR

chrome	R
● dark chrome	B

LUMINOUS FLUX value calculated for colour white, reflector chrome



MITA circle 240 acoustic suspended

UGR ≤ 19 | cd/m² ≤1500 | 1 ADDR. | 220-240 V | X-PERT | X-PERT

LUMINAIRE

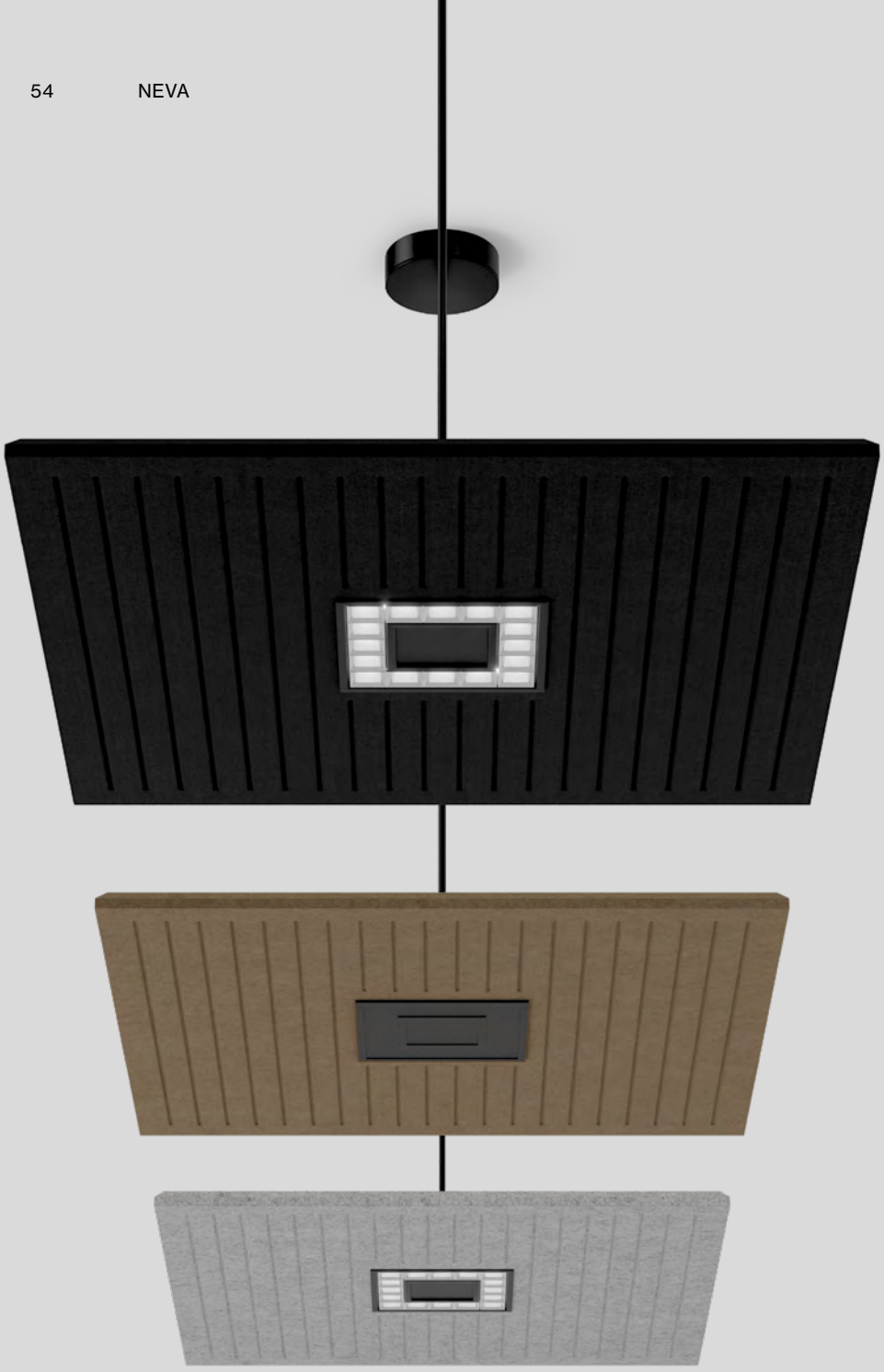
SYSTEM POWER	COLOUR TEMP.	LUMINOUS FLUX	ORDER CODE
13.8 W	3000 K	1950 lm	091-318000
	4000 K	2160 lm	
16.3 W	3000 K	2270 lm	091-318100
	4000 K	2590 lm	

BLIND SUSPENSION

TYPE	ORDER CODE
240 round	091-319000





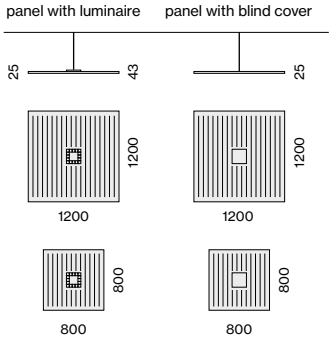


Quickinfo

PET felt
♻ from recycled material
up to absorption class A
suitable for workstations
flame retardant version available

3000 K, 4000 K
CRI ≥ 80, 3 SDCM
UGR ≤ 19 / 65° ≤ 1500 cd/m²
up to 159 lm/W
L95 @ 50 000 h
DALI-2, ESSENTIAL, SENSE sensor
reflector (UGR ≤ 19)

Types



Acoustic colours

Luminaire colours

Light distribution

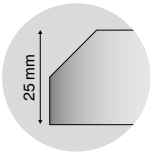
direct

NEVA panel

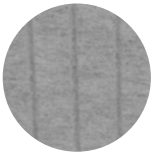
acoustic suspended

EN Acoustic element made of high quality, self-supporting, recycled PET felt with sound absorbing properties; square design; high quality visual and tactile surface with embossed pattern; absorption of direct sound and sound reflected from the ceiling; this creates high acoustic performance; pendant fitting with MITA square 200 acoustic suspended (LUMINAIRE or BLIND SUSPENSION); optionally with sensor (ESSENTIAL or SENSE)

IT Elemento acustico in feltro prodotto con PET riciclato di alta qualità, autoportante e con proprietà fonoassorbenti; forma quadrato; superficie di alta qualità sia dal punto di vista ottico che tattile con motivo in rilievo; assorbimento del suono diretto e del suono riflesso dal soffitto; con elevata performance acustica; sospesa con MITA square 200 acoustic suspended (LUMINAIRE o BLIND SUSPENSION); a scelta con sensore (ESSENTIAL o SENSE)



flat height
25 mm



embossed
acoustic panel



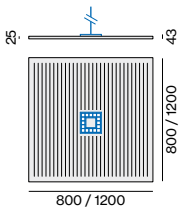
DIN EN 12464-1
UGR ≤ 19

Order options

ACOUSTIC COLOUR

○ white	W
○ marble grey	D
● anthracite	B
● black	L
● limestone	S

other colours on request



NEVA panel

PET felt | A B C D E, α_w 1.00 | 1.05 NRC | 1.02 SAA

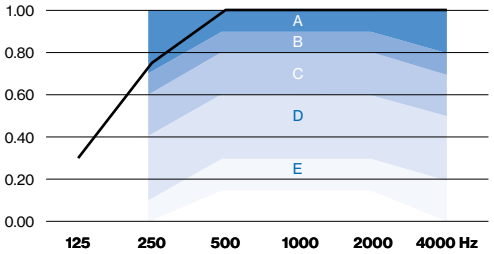
TYPE	L·W·H (mm)	ORDER CODE
800 panel	800·800·25	091-322110
1200 panel	1200·1200·25	091-322210

Acoustic data

Equivalent sound absorption area (A_{eq})

TYPE	125	250	500	1000	2000	4000 Hz
800 panel	0.19	0.48	0.64	0.64	0.64	0.64
1200 panel	0.43	1.08	1.44	1.44	1.44	1.44

Sound absorption coefficient (α_p)



Acoustic data
calculations based on FELT 25 full plate: cavity 20 cm

Order options

COLOUR TEMPERATURE

3000 K	5
4000 K	6

CONTROL

DALI-2	3
DALI-2 ESSENTIAL sensor (brightness & presence)*	B
DALI-2 SENSE sensor (brightness, presence, temperature, sound pressure, humidity, CO_2)*	P

*DALI-2 application controller needed

MATERIAL COLOUR

○ traffic white RAL 9016	7
● jet black RAL 9005	8

REFLECTOR COLOUR

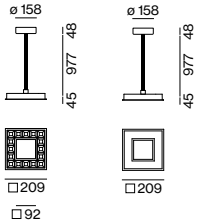
chrome	R
● dark chrome	B

LUMINOUS FLUX value calculated for colour white, reflector chrome

MITA square 200 acoustic suspended

UGR ≤ 19 | cd/m² ≤1500 | DALI 1 ADDR. | 220-240V | X-PERT | X-PERT

luminaire blind suspension



LUMINAIRE

SYSTEM POWER	COLOUR TEMP.	LUMINOUS FLUX	ORDER CODE
13.8 W	3000 K	1950 lm	091-317 0
	4000 K	2160 lm	
16.3 W	3000 K	2270 lm	091-317 1
	4000 K	2590 lm	

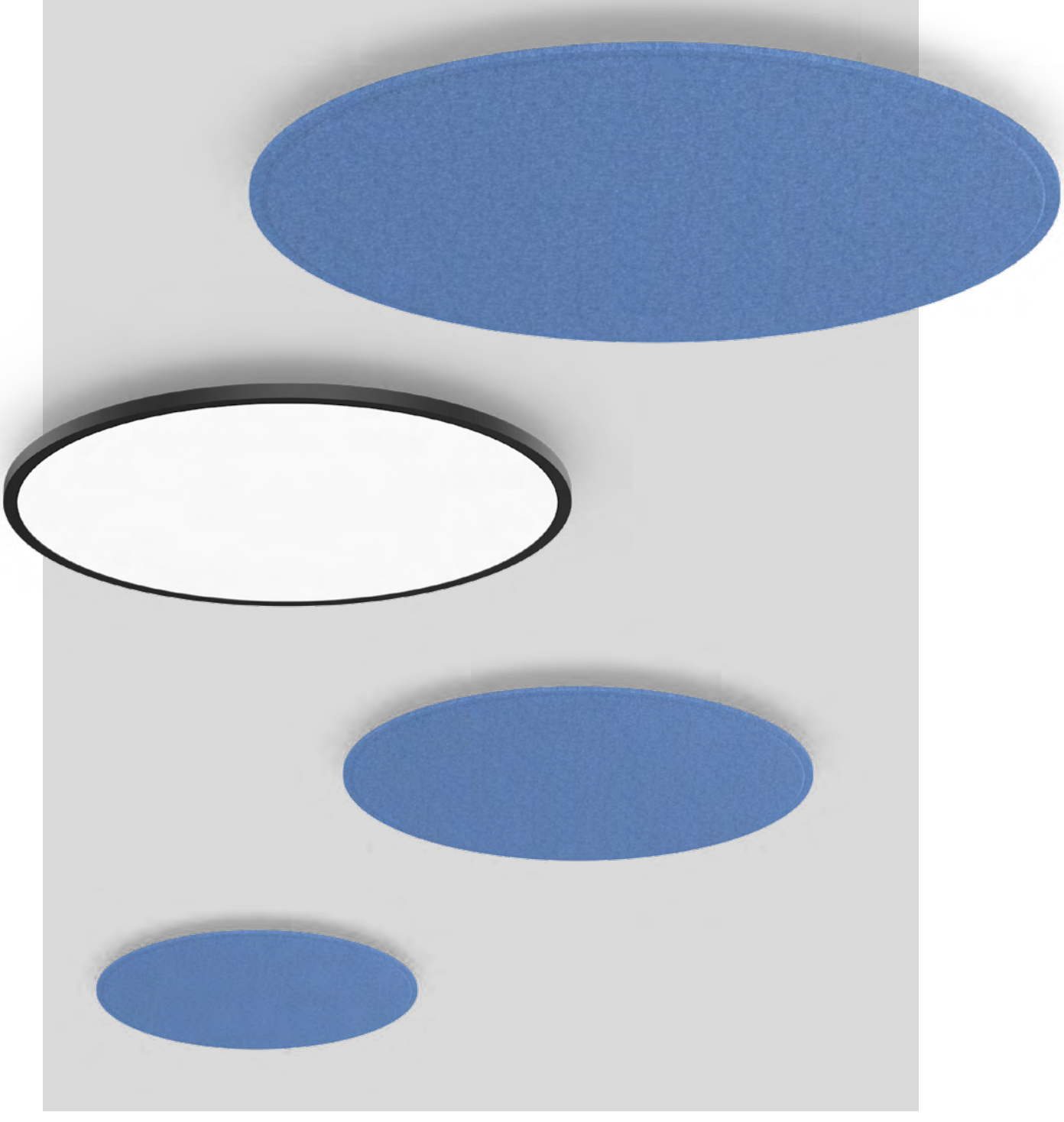
BLIND SUSPENSION

TYPE	ORDER CODE
200 square	091-319010





Office light meets acoustics

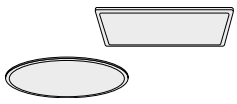


TASK

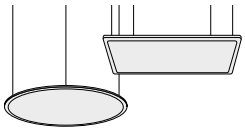
EN The slim TASK family combines minimalist design with highly effective absorber elements of the same style. The combination of geometric light and acoustic elements, freely arranged in different colours or in a classic grid, offers creative freedom. The luminaires with microprismatic covers are ideal for office workspaces, while the slim, highly effective absorber elements made of recycled PET fleece ensure optimal room acoustics.

IT I prodotti ultrasottili della linea TASK uniscono design minimalista e elementi fonoassorbenti altamente efficaci. Apparecchi luminosi e acustici disponibili in diverse forme geometriche lasciano spazio alla creatività. La diffusione microprismatica della luce permette di illuminare le postazioni per il lavoro al computer, mentre i sottili pannelli in feltro composto da PET riciclato garantiscono prestazioni acustiche ottimali.

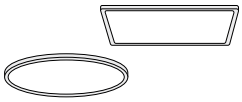
Types



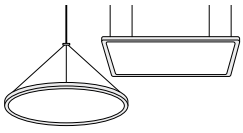
acoustic
round / square
surface



acoustic
round / square
suspended

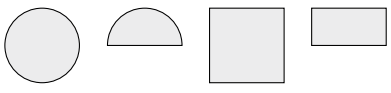


luminaire
round / square
surface



luminaire
round / square
suspended

Acoustic sizes



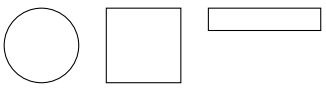
600
900
1200

1200

600
900
1200

1200

Luminaire sizes



450
600
900

450
600

1200



TASK round

acoustic elements

EN Acoustic element made of high quality, self-supporting, recycled PET felt with sound absorbing properties; choice of round or half round design; high quality visual and tactile surface; large selection of colours; direct sound is absorbed by the front-mounted fleece, sound reflected from the ceiling/wall by an additional, rear-mounted fleece; this creates high acoustic performance; choice of surface mounted and pendant versions with cable suspension; toolless suspension height adjustment of the acoustic element; ideal for combining with the luminaires TASK round surface and TASK round suspended

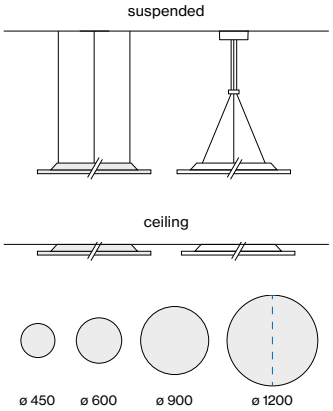
IT Elemento acustico in feltro prodotto con PET riciclato di alta qualità, autoportante e con proprietà fonoassorbenti; forma a scelta tra rotonda o semicircolare; finitura con caratteristiche estetiche e tattili di alta qualità; ampia scelta di colori; assorbimento del suono diretto grazie al tessuto non tessuto anteriore e assorbimento del suono riflesso dal soffitto/parete mediante tessuto non tessuto aggiuntivo posto sul retro; con elevata performance acustica; a scelta tra versione applicata o sospesa con cavo a sospensione; regolazione in altezza senza attrezzi sull'elemento acustico; ideale da abbinare a TASK round surface e TASK round suspended

Quickinfo

PET felt
♻ from recycled material
up to absorption class A
flame retardant version available

3000 K, 4000 K
CRI ≥ 90, 3 SDCM
UGR ≤ 19 / 65° ≤ 3000 cd/m²
up to 137 lm/W
L90 @ 50 000 h
DALI-2
microprismatic (UGR ≤ 19)
IP 40

Types



Acoustic colours

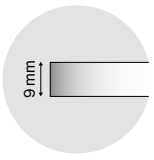


Luminaire colours



Light distributions





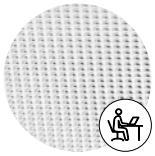
flat height
9 mm



versatile
mounting options



wide range
of colours

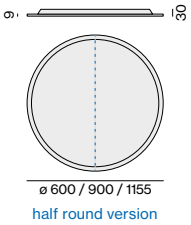


microprismatic
(UGR ≤ 19)

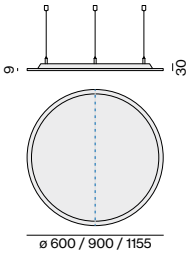
Order options

ACOUSTIC COLOUR

white	W
marble grey	D
felt grey	G
black	L
special colours	X



half round version



half round version

TASK acoustic round surface

PET felt | A B C D E, α_w 0.60 | 0.75 NRC | 0.76 SAA

TYPE	Ø·H (mm)	ORDER CODE
600 round	600·30	059-579134
900 round	900·30	059-579135
1200 round	1155·30	059-579136
1200 half round	1155·573·30	059-579146

TASK acoustic round suspended

PET felt | A B C D E, α_w 0.95 | 0.95 NRC | 0.91 SAA

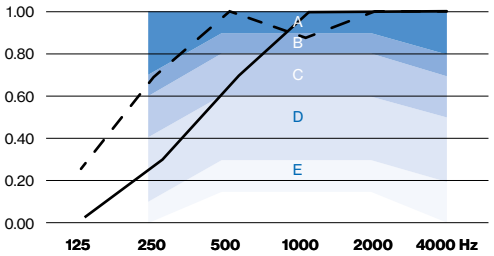
TYPE	Ø·H (mm)	ORDER CODE
600 round	600·30	059-579234
900 round	900·30	059-579235
1200 round	1155·30	059-579236
1200 half round	1155·573·30	059-579246

Acoustic data

Equivalent sound absorption area (A_{eq})

TYPE	125	250	500	1000	2000	4000 Hz
600 surface	0.01	0.08	0.20	0.28	0.28	0.28
900 surface	0.03	0.19	0.45	0.64	0.64	0.64
1200 surface	0.05	0.31	0.73	1.05	1.05	1.05
1200 half surface	0.03	0.16	0.37	0.53	0.53	0.53
600 suspended	0.21	0.22	0.36	0.43	0.49	0.53
900 suspended	0.47	0.50	0.80	0.97	1.10	1.20
1200 suspended	0.60	0.77	1.23	1.53	1.80	1.87
1200 half suspended	0.30	0.33	0.60	0.77	0.87	0.87

Sound absorption coefficient (α_p)



Acoustic data
calculations based on TASK acoustic 1200 half square; surface: cavity 3 cm; suspended: cavity 20 cm

Order options

COLOUR TEMPERATURE

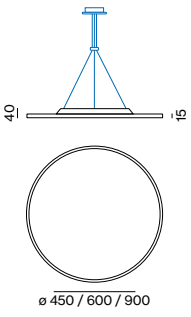
3000 K	0
4000 K	1

LUMINAIRE COLOUR

pure white RAL 9010	7
jet black RAL 9005	8
special colours*	X

*canopy always in white

LUMINOUS FLUX value calculated for 4000 K, colour white, cover microprism.



cable option

TASK round surface

CRI ≥90 | UGR ≤19 | cd/m² ≤3000 | RG0 IEC 62471 | 1 ADDR. | 220-240 V | X-PERT | X-PERT

TYPE	SYSTEM POWER	LUMINOUS FLUX	ORDER CODE
450	16 W	1860 lm	059-0141 :: 3 P
600	30 W	3690 lm	059-0142 :: 3 P

TASK round suspended

CRI ≥90 | UGR ≤19 | RG0 IEC 62471 | 1-2 ADDR. | 220-240 V | X-PERT | X-PERT

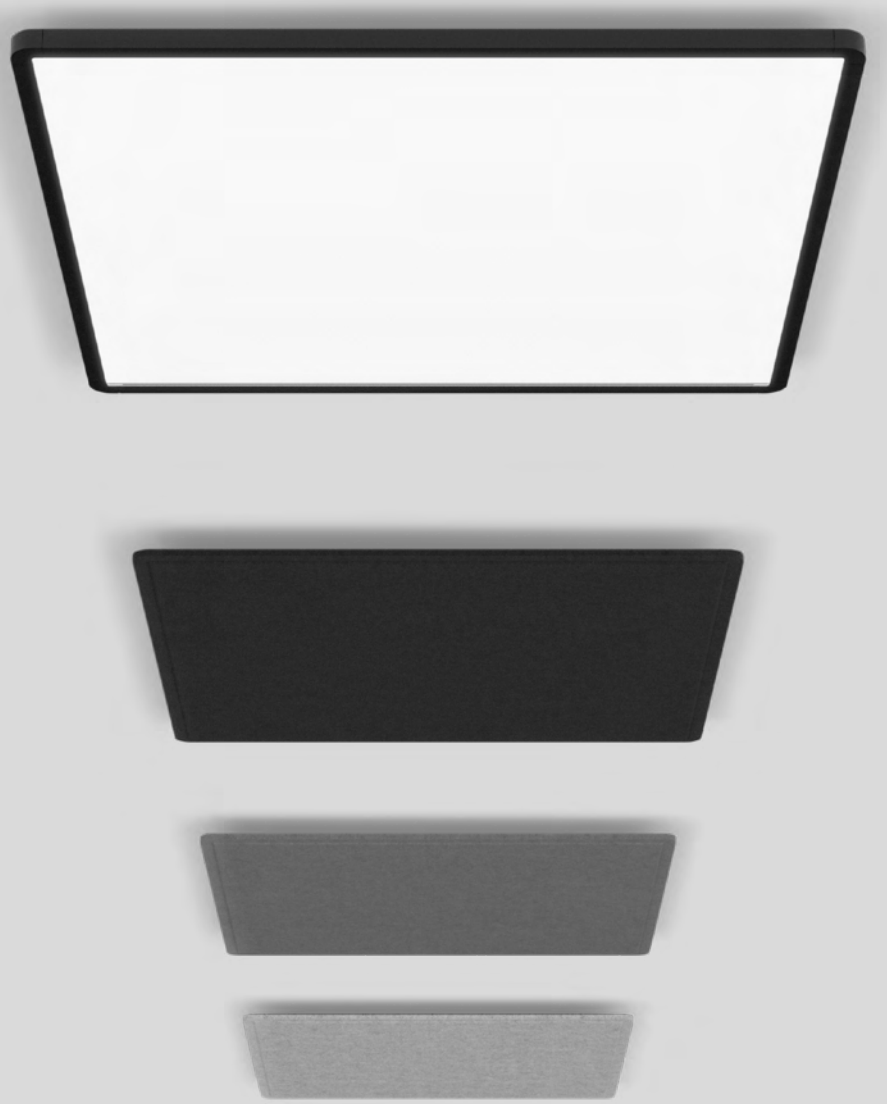
TYPE	SYSTEM POWER	LUMINOUS FLUX	ORDER CODE
450	16 W	1860 lm	059-0241 :: 3 P
	38 W	↧2880/↥1550 lm	059-0261 :: 3 P
600	30 W	3690 lm	059-0242 :: 3 P
	45 W	↧3690/↥1880 lm	059-0262 :: 3 P
900	52 W	7060 lm	059-0243 :: 3 K
	100 W	↧9370/↥4370 lm	059-0263 :: 3 K



0.63 > **0.47**
seconds

acoustic planning ➔ p. 165



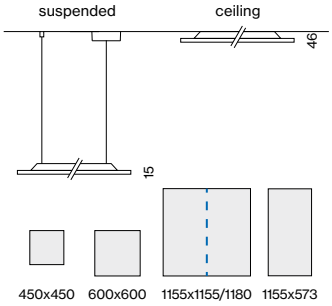


Quickinfo

PET felt
♻ from recycled material
up to absorption class A
flame retardant version available

3000 K, 4000 K
CRI ≥ 90, 3 SDCM
UGR ≤ 19 / 65° ≤ 3000 cd/m²
up to 137 lm/W
L90 @ 50 000 h
DALI-2
microprismatic (UGR ≤ 19)

Types



Acoustic colours



Luminaire colours



Light distributions

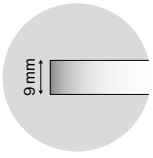


TASK square

acoustic elements

EN Acoustic element made of high quality, self-supporting, recycled PET felt with sound absorbing properties; choice of square or rectangular design; high quality visual and tactile surface; large selection of colours; direct sound is absorbed by the front-mounted fleece, sound reflected from the ceiling/wall by an additional, rear-mounted fleece; this creates high acoustic performance; choice of surface mounted and pendant versions with cable suspension; toolless suspension height adjustment of the acoustic element; ideal for combining with the luminaires TASK square surface and TASK square suspended

IT Elemento acustico in feltro prodotto con PET riciclato di alta qualità, autoportante e con proprietà fonoassorbenti; forma a scelta tra quadrata o rettangolare; finitura con caratteristiche estetiche e tattili di alta qualità; ampia scelta di colori; assorbimento del suono diretto grazie al tessuto non tessuto anteriore e assorbimento del suono riflesso dal soffitto/parete mediante tessuto non tessuto aggiuntivo posto sul retro; con elevata performance acustica; a scelta tra versione applicata o sospesa con cavo a sospensione; regolazione in altezza senza attrezzi sull'elemento acustico; ideale da abbinare a TASK square surface e TASK square suspended



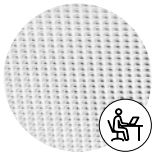
flat height
9 mm



versatile
mounting options



wide range
of colours

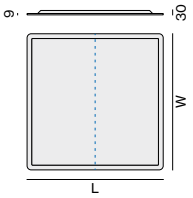


microprismatic
(UGR ≤ 19)

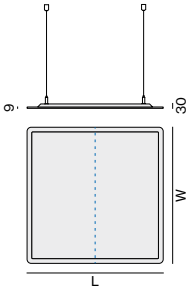
Order options

ACOUSTIC COLOUR

○ white	W
marble grey	D
felt grey	G
● black	L
special colours	X



half square version



half square version

TASK acoustic square surface

PET felt | A B **C** D E, α_w 0.60 | 0.75 NRC | 0.76 SAA

TYPE	L·W·H (mm)	ORDER CODE
600 square	600·600·30	059-579114
900 square	900·900·30	059-579115
1200 square	1155·1155·30	059-579116
1200 square wide	1155·1180·30	059-579166
1200 half square	1155·573·30	059-579126

TASK acoustic square suspended

PET felt | **A** B C D E, α_w 0.95 | 0.95 NRC | 0.91 SAA

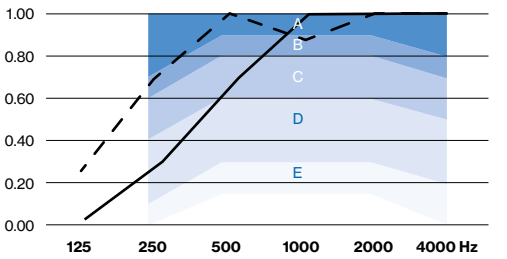
TYPE	L·W·H (mm)	ORDER CODE
600 square	600·600·30	059-579214
900 square	900·900·30	059-579215
1200 square	1155·1155·30	059-579216
1200 square wide	1155·1180·30	059-579266
1200 half square	1155·573·30	059-579226

Acoustic data

Equivalent sound absorption area (A_{eq})

TYPE	125	250	500	1000	2000	4000 Hz
600 surface	0.02	0.11	0.25	0.36	0.36	0.36
900 surface	0.04	0.24	0.57	0.81	0.81	0.81
1200 surface	0.06	0.39	0.90	1.29	1.29	1.29
1200 square wide surf.	0.07	0.41	0.95	1.36	1.36	1.36
1200 half surface	0.03	0.20	0.46	0.66	0.66	0.66
600 suspended	0.20	0.27	0.41	0.51	0.59	0.65
900 suspended	0.45	0.61	0.93	1.15	1.34	1.46
1200 suspended	0.73	1.00	1.53	1.90	2.20	2.40
1200 square wide susp.	0.75	1.02	1.56	1.94	2.24	2.45
1200 half suspended	0.43	0.40	0.73	0.97	1.10	1.20

Sound absorption coefficient (α_p)



Acoustic data
calculations based on TASK acoustic 1200 half square; surface: cavity 3 cm; suspended: cavity 20 cm

Order options

COLOUR TEMPERATURE

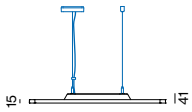
3000 K	0
4000 K	1

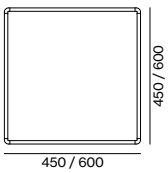
LUMINAIRE COLOUR

○ pure white RAL 9010	7
● jet black RAL 9005	8
special colours*	X

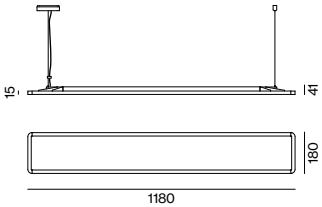
*canopy always in white

LUMINOUS FLUX value calculated for 4000 K, colour white, cover microprism.





450 / 600
cable option



TASK square surface

CRI ≥90 | UGR ≤19 | cd/m² ≤3000 | RG0 IEC 62471 | DALI 1 ADDR. | 220-240 V | X-PERT | X-PERT

TYPE	SYSTEM POWER	LUMINOUS FLUX	ORDER CODE
450	15 W	2000 lm	059-2141 :: 3 K
600	27.3 W	3730 lm	059-2142 :: 3 K

TASK square / TASK S suspended

CRI ≥90 | UGR ≤19 | RG0 IEC 62471 | DALI 1 ADDR. | 220-240 V | X-PERT | X-PERT

TYPE	SYSTEM POWER	LUMINOUS FLUX	ORDER CODE
450	15 W	2000 lm	059-2211 :: 3 K
	35 W	↧3100 / ↥1570 lm	059-2231 :: 3 K
600	27.3 W	3730 lm	059-2212 :: 3 K
	57 W	↧6020 / ↥1620 lm	059-2232 :: 3 K
1180 × 180	29.6 W	↧2010 / ↥1640 lm	059-5264 :: 3 K

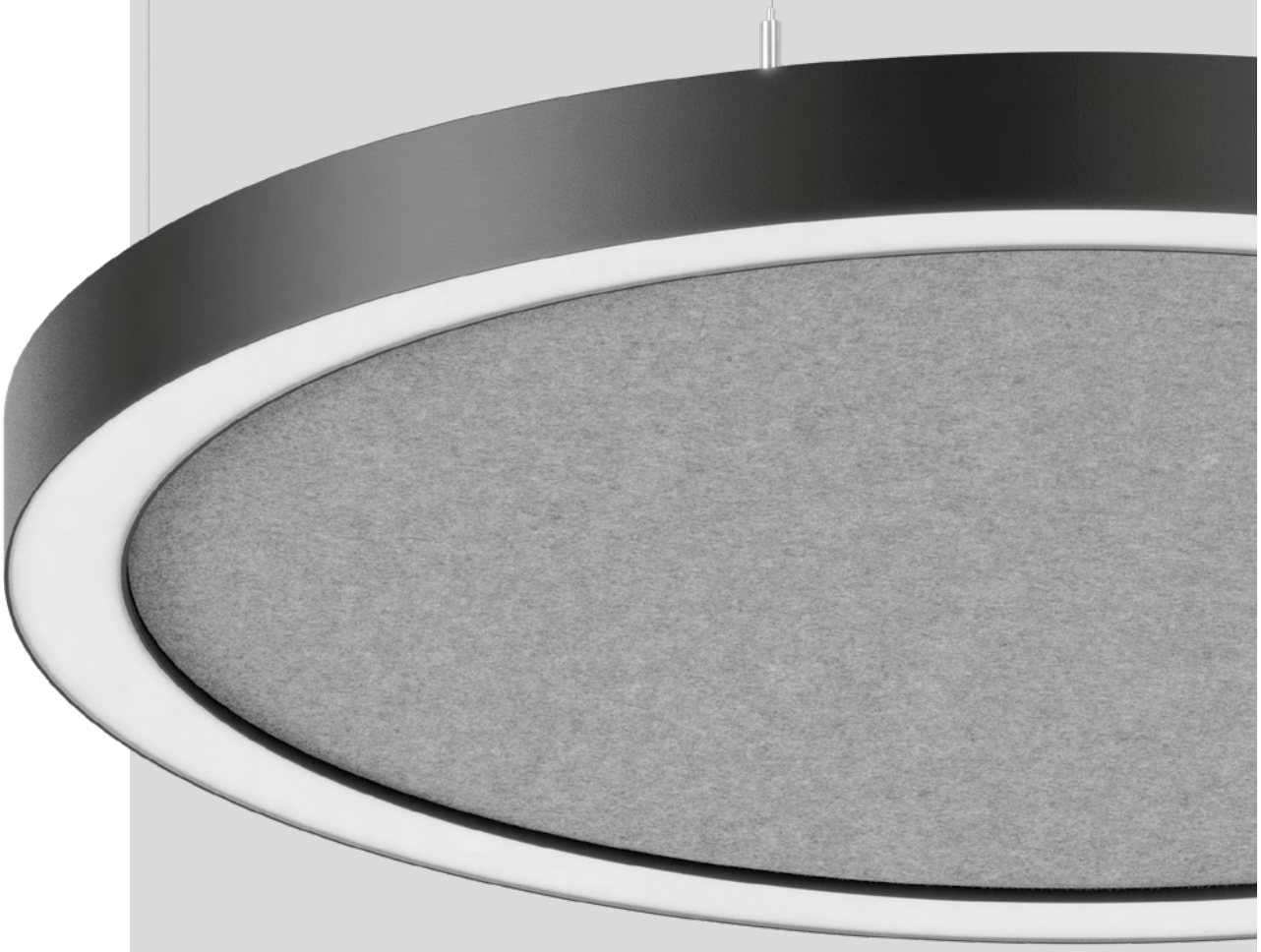
1.10 > **0.95**
seconds

acoustic planning ➔ p. 164





Sound and light in perfect circles

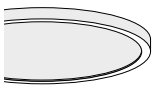


MINO circle

EN Aesthetic circular arrangements: The wide range of sizes and colours of the MINO CIRCLE variants, together with matching acoustic elements, create fascinating, ever-changing ceiling patterns and figures. The circular luminaires can be combined with highly effective round absorbers and matching, freely suspended acoustic elements to promote concentration and speech intelligibility. The opal cover ensures homogeneous illumination, while the microprismatic cover guarantees ideal work light. This combines perfect light with excellent room acoustics.

IT Composizioni con moduli circolari, in diversi colori e dimensioni. Con MINO CIRCLE è possibile abbinare i diversi elementi acustici per donare movimento ai soffitti. Ai corpi illuminanti rotondi si possono aggiungere i pannelli circolari sospesi per promuovere la concentrazione e l'intelligibilità del parlato negli ambienti. La versione con la cover opale consente l'illuminazione omogenea, mentre la cover microprismatica garantisce la luce ottimale nelle postazioni di lavoro. Luce perfetta e acustica eccellente.

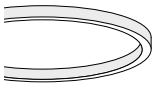
Types



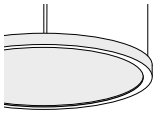
acoustic inlay
ceiling



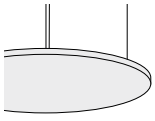
acoustic circle
ceiling



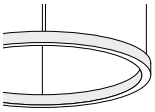
luminaire
ceiling



acoustic inlay
suspended

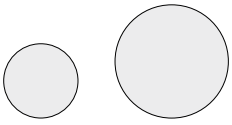


acoustic circle
suspended



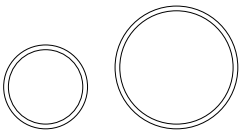
luminaire
suspended

Acoustic size

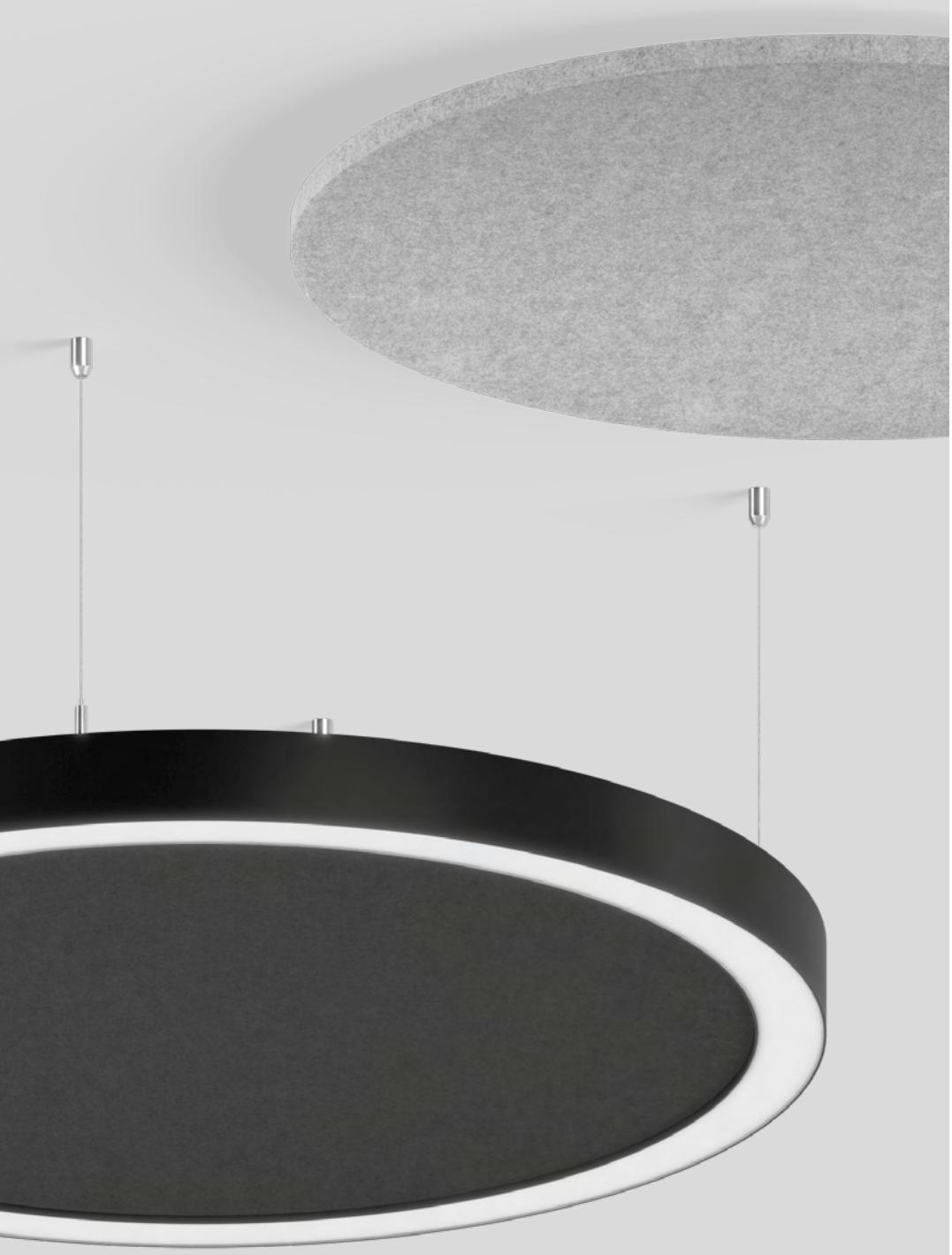


1000 1500

Luminaire size



1000 1500

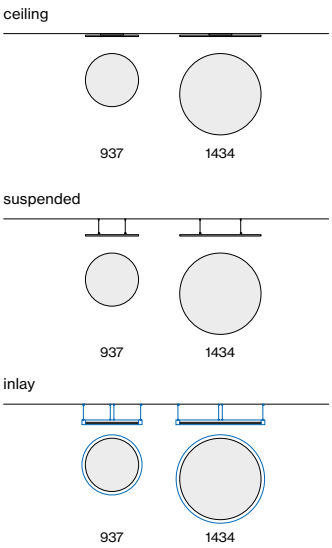


Quickinfo

PET felt
♻ from recycled material
flame retardant version available

3000 K, 4000 K
CRI ≥ 80, 3 SDCM
up to 154 lm/W
L90 @ 50 000 h
DALI-2
opal, microprismatic

Types



Acoustic colours



Luminaire colours



Light distributions

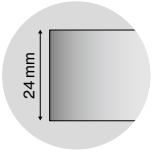


MINO circle

acoustic elements

EN Acoustic element made of high quality, self-supporting, recycled PET felt with sound absorbing properties; round design; high quality visual and tactile surface; absorption of direct sound and sound reflected from the ceiling; this creates high acoustic performance; for insertion into MINO circle ceiling and MINO circle suspended; or single installaion, choice of surface mounted and pendant versions with cable suspension; tool-less suspension height adjustment of the acoustic element

IT Elemento acustico in feltro prodotto con PET riciclato di alta qualità, autoportante e con proprietà fonoassorbenti; forma rotonda; finitura con caratteristiche estetiche e tattili di alta qualità; assorbimento del suono diretto e del suono riflesso dal soffitto; con elevata performance acustica; per inserimento in MINO circle suspended; o montaggio singolo a scelta tra versione con montaggio a plafone o sospesa con cavo a sospensione; regolazione in altezza senza attrezzi sull'elemento acustico



flat height
24 mm



quick and easy
to retrofit



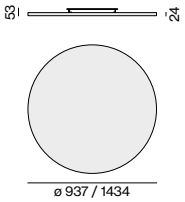
opal or micro-
prismatic cover

Order options

ACOUSTIC COLOUR

white	W
marble grey	D
anthracite	B
black	L
limestone	S

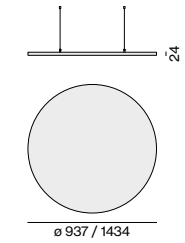
other colours on request



MINO circle acoustic ceiling

PET felt · A B C D E, α_w 0.70 · 1.15 NRC · 1.16 SAA

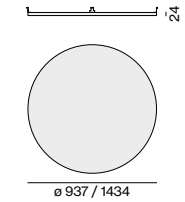
TYPE	Ø·H (mm)	ORDER CODE
1000 ceiling	937·25	034-271111
1500 ceiling	1434·25	034-271211



MINO circle acoustic suspended

PET felt · A B C D E, α_w 0.65 · 0.70 NRC · 0.74 SAA

TYPE	Ø·H (mm)	ORDER CODE
1000 suspended	937·25	034-272111
1500 suspended	1434·25	034-272211



MINO circle acoustic inlay

PET felt · A B C D E, α_w 0.65 · 0.70 NRC · 0.74 SAA

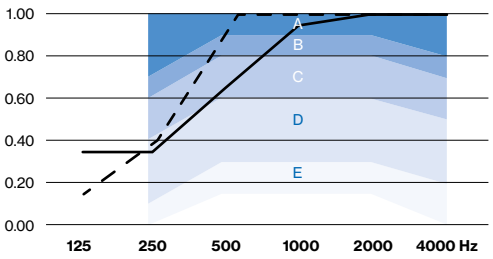
TYPE	Ø·H (mm)	ORDER CODE
1000 inlay	937·25	034-270111
1500 inlay	1434·25	034-270211

Acoustic data

Equivalent sound absorption area (A_{eq})

TYPE	125	250	500	1000	2000	4000 Hz
1000 ceiling	0.10	0.27	0.70	1.17	1.07	1.00
1500 ceiling	0.30	0.60	1.43	2.30	2.17	2.10
1000 suspended/inlay	0.50	0.50	0.87	1.30	1.43	1.57
1500 suspended/inlay	0.97	1.20	1.83	2.67	3.07	3.30

Sound absorption coefficient (α_p)



Acoustic data
calculations based on MINO circle acoustic 1000; ceiling: cavity 3 cm; suspended: cavity 100 cm

Order options

COLOUR TEMPERATURE

3000 K	5
4000 K	6

MATERIAL COLOUR

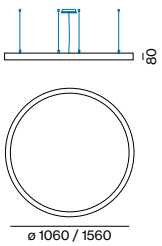
pure white RAL 9010	7
white aluminium RAL 9006	G
jet black RAL 9005	8
special colours*	X

*canopy always in white

LIGHT OPTIC COVER

opal high performance	H
microprismatic	Z

LUMINOUS FLUX value calculated for 4000 K, colour white, cover microprismatic



MINO 60 circle ceiling

RG0 IEC 62471 · DALI 4 ADDR. · 220-240 V · X-PERT · X-PERT · CB

TYPE	SYSTEM POWER	LUMINOUS FLUX	ORDER CODE
1000	53 W	7480 lm	034-2112 :: 3
1500	83 W	12000 lm	034-2110 :: 3

MINO 60 circle suspended

RG0 IEC 62471 · DALI 4 ADDR. · 220-240 V · X-PERT · X-PERT · CB

TYPE	SYSTEM POWER	LUMINOUS FLUX	ORDER CODE
1000	53 W	7480 lm	034-2212 :: 3
	71 W	↧ 7480 / ↥ 3430 lm	034-2213 :: 3
1500	83 W	12000 lm	034-2210 :: 3
	114 W	↧ 12000 / ↥ 5490 lm	034-2211 :: 3



XAL Headquarters Graz, AT

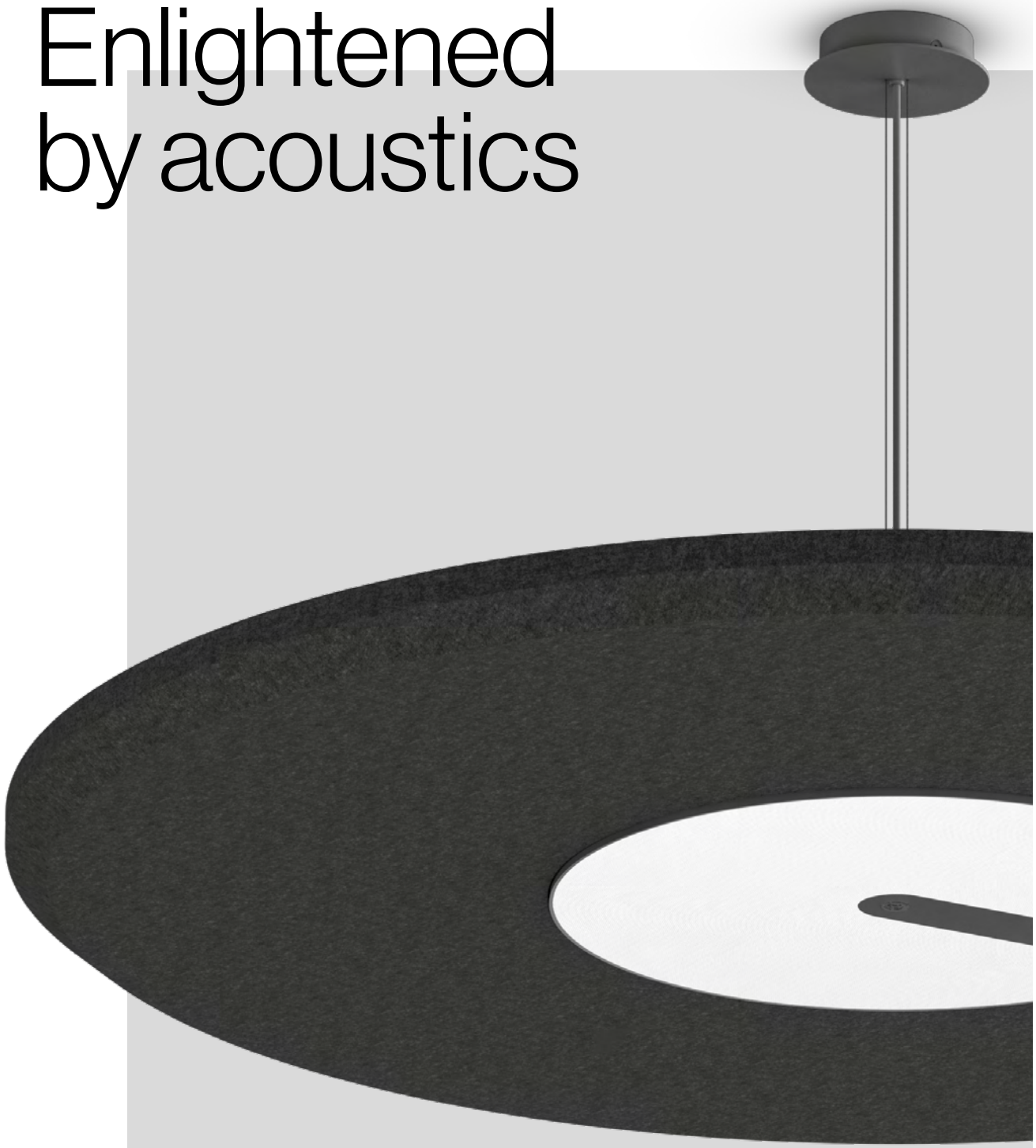


Planday Copenhagen, DK –
lighting design by anker & co




The Rebel

Enlightened by acoustics

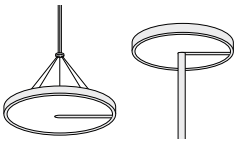


SONIC

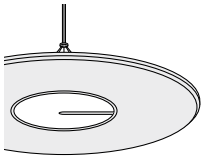
EN The SONIC family of acoustic luminaires combines elegant design with functional elements to create an impactful look. The classic round design, combined with ring-shaped absorber elements and acoustic shades, makes the series an eye-catcher. The microprismatic covers ensure glare-free workplace lighting, while the combinable, highly effective absorbers and acoustic shades create ideal room acoustics. SONIC makes an elegant interior statement that perfectly combines light and acoustics.

IT Le lampade acustiche della linea SONIC uniscono design elegante e elementi fonoassorbenti per un'estetica di grande effetto. Il classico cerchio, abbinato ad anelli e a schermi acustici, la rende molto suggestiva. La cover microprismatica garantisce una postazione di lavoro priva di riflessi, mentre gli elementi fonoassorbenti ad altissima efficacia danno luogo ad un ambiente acusticamente ottimale. Per una luce e un'acustica ideali.

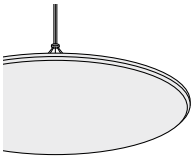
Types



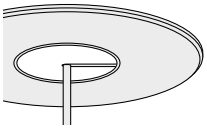
luminaire
suspended / free standing



absorber ring
luminaire mounted
suspended



absorber disc
suspended



absorber ring
luminaire mounted
free standing

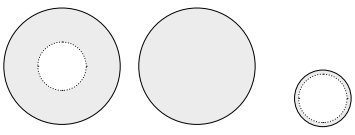


soundcap
luminaire mounted
suspended



soundcap
luminaire mounted
free standing

Acoustic size



1050
1280
absorber ring

1050
1280
absorber disc

527
soundcap

Luminaire size



500

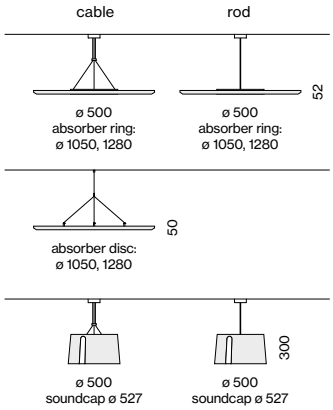


Quickinfo

PET felt
♻ from recycled material
flame retardant version available

3000 K, 4000 K
CRI ≥80, 3 SDCM
up to 152 lm/W
L90 @ 50 000 h
DALI-2
ESSENTIAL sensor

Types



Acoustic colours


absorber


soundcap xilence.xal.com/colours

Luminaire colours


standard xal.com/colours

Light distribution


direct
indirect

SONIC

suspended

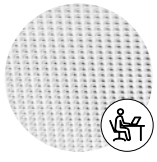
EN SONIC acoustic absorber: Acoustic element made of high quality, self-supporting, recycled PET felt with sound absorbing properties | high acoustic performance by doubling the material; SONIC acoustic soundcap: Acoustically effective lampshade made of high quality, self-supporting, recycled PET felt with sound absorbing properties | large selection of colours; high quality visual and tactile surface; for attaching to SONIC suspended or SONIC free standing (absorber ring and soundcap); subsequent attachment possible; or single installation, pendant fitting with cable suspension (absorber disc)

IT SONIC acoustic absorber: Elemento acustico in feltro prodotto con PET riciclato di alta qualità, autoportante e con proprietà fonoassorbenti | alte prestazioni acustiche grazie al materiale doppiato; SONIC acoustic soundcap: Paralume acusticamente efficace in feltro prodotto con PET riciclato di alta qualità, autoportante e con proprietà fonoassorbenti | ampia scelta di colori; finitura con caratteristiche estetiche e tattili di alta qualità; da montare su SONIC suspended o SONIC free standing (absorber ring e soundcap); possib. integrazione a posteriori; o montaggio singolo, sospeso con cavo a sospensione (absorber disc)


quick and easy to retrofit



sensor version available


microprismatic (UGR ≤ 19)


direct / indirect illumination

Order options

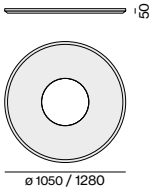
ABSORBER COLOUR

white	W
marble grey	D
anthracite	B
black	L
limestone	S

SOUNDCAP COLOUR

white	W
marble grey	D
felt grey	G
black	L
special colours	X

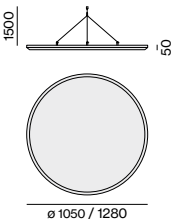
bracket colour white; other bracket colours on request;



SONIC acoustic absorber ring

PET felt | A B C D E, α_w 0.70 | 0.85 NRC | 0.91 SAA

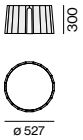
TYPE	Ø·H (mm)	ORDER CODE
1050 absorber ring	1050·50	059-771121
1280 absorber ring	1280·50	059-771111



SONIC acoustic absorber disc suspended

PET felt | A B C D E, α_w 0.55 | 0.80 NRC | 0.82 SAA

TYPE	Ø·H (mm)	ORDER CODE
1050 absorber disc	1050·50	059-772221
1280 absorber disc	1280·50	059-772211



SONIC acoustic soundcap

PET felt | A B C D E, α_w 0.60 | 0.60 NRC | 0.58 SAA

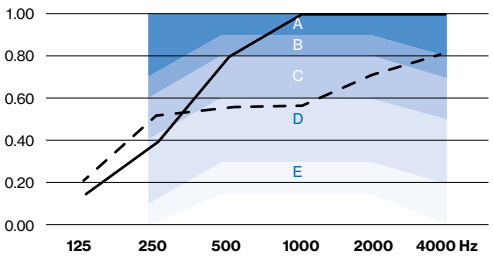
TYPE	Ø·H (mm)	ORDER CODE
soundcap	527·300	059-773111

Acoustic data

Equivalent sound absorption area (A_{eq})

TYPE	125	250	500	1000	2000	4000 Hz
absorber ring 1050	0.20	0.53	1.08	1.62	1.66	1.62
absorber ring 1280	0.33	0.87	1.77	2.63	2.70	2.63
absorber disc 1050	0.04	0.45	1.21	1.97	2.04	1.95
absorber disc 1280	0.07	0.67	1.80	2.93	3.03	2.90
soundcap	0.17	0.47	0.53	0.53	0.63	0.73

Sound absorption coefficient (α_p)



Acoustic data
calculations based on SONIC acoustic absorber ring 1280: cavity 180 cm; soundcap: cavity 174 cm

Order options

MOUNTING

cable suspension 1500 mm	2
rod 1000 mm	4

COLOUR TEMPERATURE

3000 K	5
4000 K	6

CONTROL

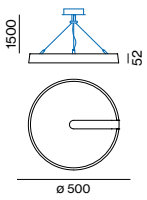
DALI-2	3
DALI-2 ESSENTIAL sensor (brightness & presence)	7

LUMINAIRE COLOUR

pure white RAL 9010	7
jet black RAL 9005	8
special colours*	X

*canopy always in white

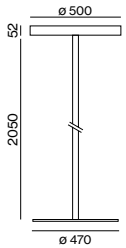
LUMINOUS FLUX value calculated for 4000 K, colour white, cover microprism.



SONIC suspended

UGR ≤ 19 | RG 0 IEC 62471 | DALI 1 ADDR. | 220-240V | X-PERT | X-PERT

TYPE	SYSTEM POWER	LUMINOUS FLUX	ORDER CODE
500	69 W	↧ 5290 / ↥ 5230 lm	059-7 21 P



SONIC centric pole free standing

UGR ≤ 19 | cd/m² ≤3000 | RG 0 IEC 62471 | 220-240V | X-PERT | X-PERT

TYPE	SYSTEM POWER	LUMINOUS FLUX	ORDER CODE
500	69 W	↧ 5290 / ↥ 5230 lm	059-7921 P
	98 W	↧ 2730 / ↥ 9960 lm	059-7941 P

**din – Dietmar Nocker Sicherheits-
technik GmbH & Co KG** Linz, AT





Raiffeisen Software GmbH Vienna, AT –
by studio thörnblom | Architekt DI Wolfgang Wildauer and Enacon ZT GmbH





Shaping the environment

design by 13&9

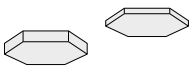


HEX-O

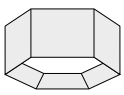
EN HEX-O marries a geometric appearance with a wide range of options for combining light and acoustic elements to create countless sculptural ceiling patterns. The acoustic elements are characterised by their striking shape. In addition, the absorber elements offer a triple acoustic effect. They absorb high frequencies through the recycled PET fleece, trap low frequencies through the cavity, and scatter the sound waves through their shape. The combination of luminaires suitable for computer workstations and acoustic elements of the same design ensures maximum creative freedom.

IT La forma esagonale di HEX-O permette di unire luce e acustica nella creazione di soffitti dai motivi scultorei. I pannelli offrono un triplo effetto, assorbendo le alte frequenze attraverso il tessuto in PET riciclato, intrappolando quelle basse nella parte incavata e dissipando le onde sonore su tutto il volume. L'unione tra corpi illuminanti e elementi acustici nelle postazioni per il lavoro al computer garantisce massima libertà compositiva.

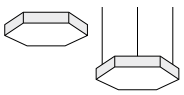
Types



module / module flat
ceiling / suspended

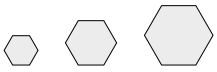


absorber
luminaire / module mounted



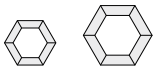
luminaire
ceiling / suspended

Module sizes



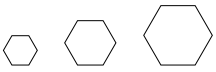
500 750 1000

Absorber sizes

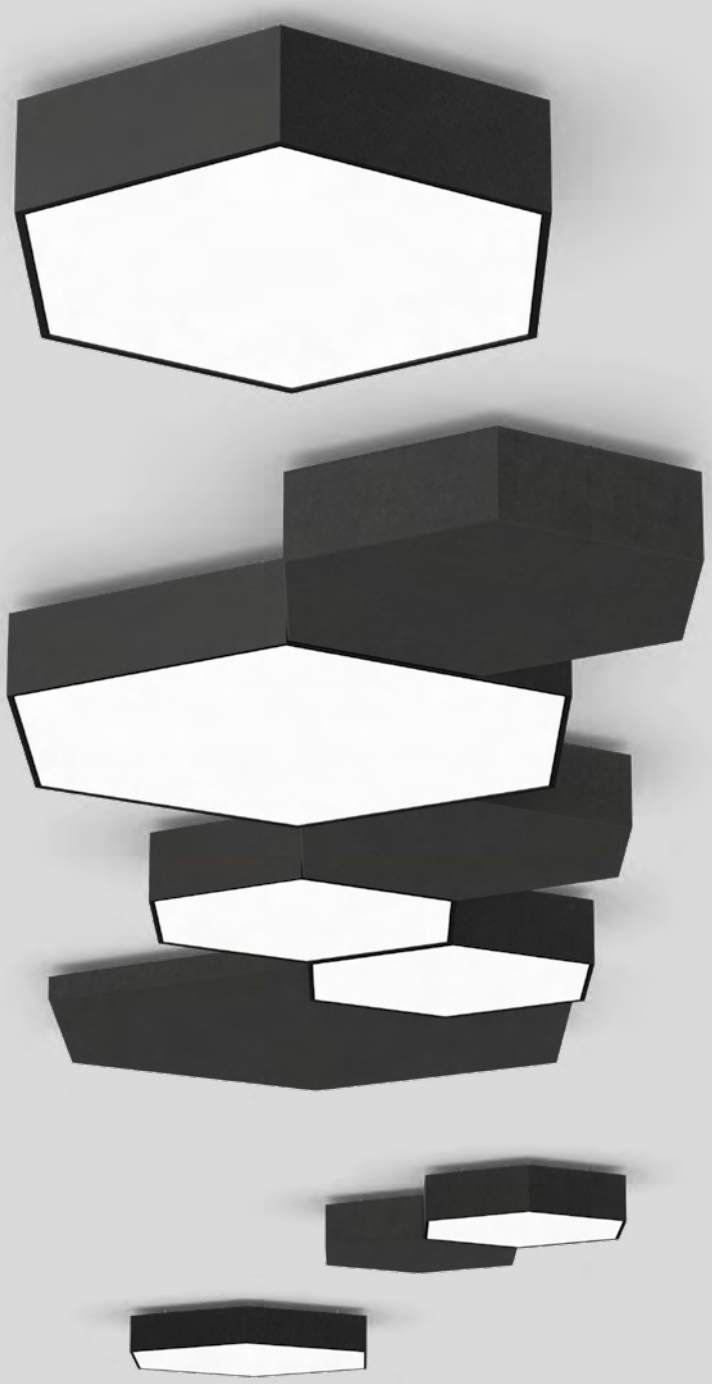


750 1000

Luminaire sizes



500 750 1000



design by
13&9

HEX-O

ceiling

EN Hexagonal luminaires & acoustic elements, suitable for single or group installation; acoustic element made of high quality, self-supporting, recycled PET felt with sound absorbing properties; MODULE in the luminaires' dimensions, FLAT with reduced height, ABSORBER to combine with other housings; acoustically effective cavities; absorption and scattering of sound waves; light housing from extruded aluminium profile, seamlessly welded; powder coated; satinised or microprismatic PMMA cover; energy-eff. LEDs - very good colour rendering; plug-in terminals for through wiring; installation without tools

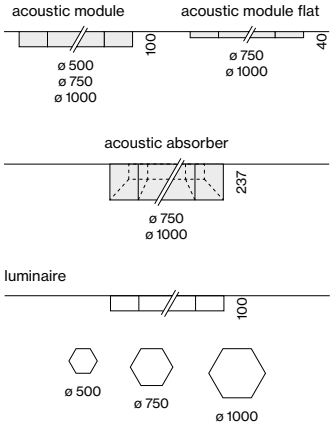
IT Apparecchi & elementi acustici esagonali, adatti per montaggio singolo e a gruppi; Elemento acustico in feltro prodotto con PET riciclato di alta qualità, autoportante e con proprietà fonoassorbenti; MODULE nelle dimensioni degli apparecchi, FLAT con altezza ridotta, ABSORBER per combinazioni con altri corpi ed elementi; cavità efficaci a livello acustico; assorbimento e diffusione del suono; corpo illuminante in profilo in alluminio estruso e saldato senza punti di saldatura; verniciatura a polvere; diffusore satinato o a microprismi in PMMA; LED a risp. energ. - ottima resa cromatica; morsetto per collegamento continuo; montaggio senza utensili

Quickinfo

PET felt
♻ from recycled material
up to absorption class A
flame retardant version available

3000 K, 4000 K
CRI ≥80, 3 SDCM
up to 142 lm/W
L90 @ 50 000 h
DALI-2
opal, microprismatic (UGR ≤ 19)

Types



Acoustic colours



standard xilence.xal.com/colours

Luminaire colours



standard xal.com/colours

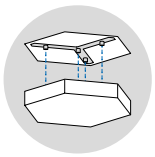
Light distribution



direct



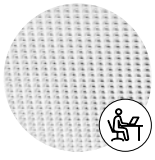
modular system



easy mounting with one click



wide range of colours



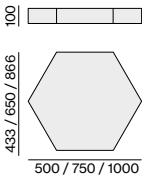
microprismatic (UGR ≤ 19)

Order options

ACOUSTIC COLOUR

○ white	W
marble grey	D
felt grey	G
● black	L
special colours	X

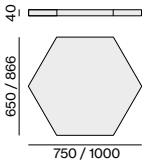
HEX-O MODULE ceiling



PET felt | A B C D E, α_w 0.90 | 0.85 NRC | 0.88 SAA

TYPE	L·W·H (mm)	ORDER CODE
MODULE 500	500·433·100	073-691510
MODULE 750	750·650·100	073-691610
MODULE 1000	1000·866·100	073-691710

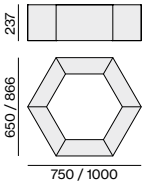
HEX-O MODULE FLAT ceiling



PET felt | A B C D E, α_w 0.50 | 0.70 NRC | 0.69 SAA

TYPE	L·W·H (mm)	ORDER CODE
MODULE FLAT 750	750·650·40	073-691620
MODULE FLAT 1000	1000·866·40	073-691720

HEX-O ABSORBER



PET felt | A B C D E, α_w 0.95 | 0.90 NRC | 0.96 SAA

TYPE	L·W·H (mm)	ORDER CODE
ABSORBER 750*	750·650·237	073-691640
ABSORBER 1000**	1000·866·237	073-691740

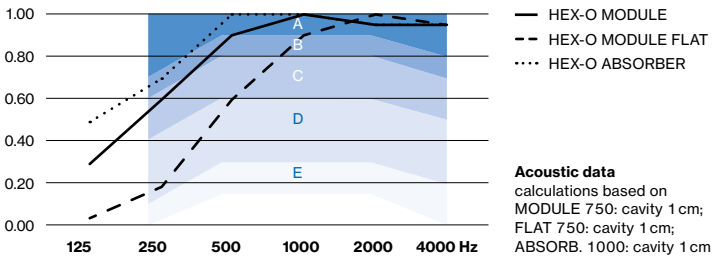
*only in combination with HEX-O 500 or MODULE 500
**only in combination with HEX-O 750, MODULE 750 or MODULE FLAT 750

Acoustic data

Equivalent sound absorption area (A_{eq})

TYPE	125	250	500	1000	2000	4000 Hz
MODULE 500	0.09	0.18	0.30	0.32	0.28	0.32
MODULE 750	0.17	0.33	0.57	0.60	0.53	0.60
MODULE 1000	0.27	0.54	0.91	0.97	0.86	0.97
MODULE FLAT 750	0.03	0.10	0.27	0.40	0.50	0.43
MODULE FLAT 1000	0.06	0.17	0.45	0.67	0.84	0.72
ABSORBER 750	0.42	0.61	0.98	0.86	0.84	0.84
ABSORBER 1000	0.57	0.83	1.33	1.17	1.13	1.13

Sound absorption coefficient (α_p)



Acoustic data
calculations based on MODULE 750: cavity 1 cm; FLAT 750: cavity 1 cm; ABSORB. 1000: cavity 1 cm

Order options

COLOUR TEMPERATURE

3000 K	5
4000 K	6

CONTROL

DALI-2

LUMINAIRE COLOUR

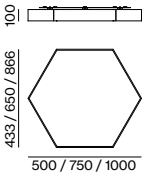
○ pure white RAL 9010	7
● jet black RAL 9005	8
special colours	X

LIGHT OPTIC COVER

opal	O
microprismatic (UGR ≤ 19)	P

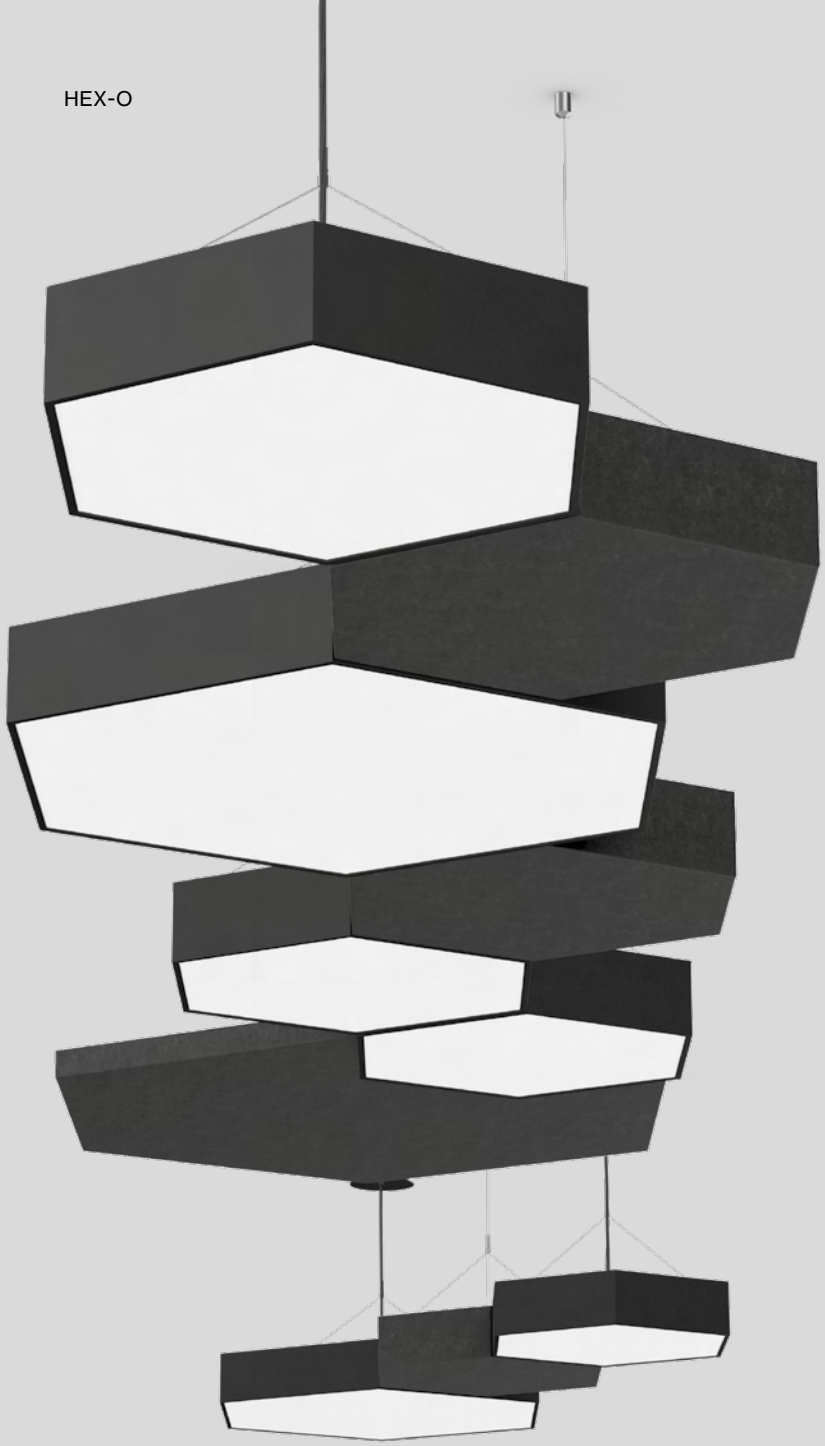
LUMINOUS FLUX value calculated for 4000 K, colour white, cover microprism.

HEX-O ceiling



UGR ≤ 19 | cd/m² ≤3000 | RG0 IEC 62471 | DALI 2 ADDR. | 220-240V | X-PERT | X-PERT

TYPE	SYSTEM POWER	LUMINOUS FLUX	ORDER CODE
500	16.3 W	2290 lm	073-615 1 :: 3
750	35 W	4960 lm	073-616 1 :: 3
1000	68 W	9640 lm	073-617 1 :: 3



design by
13&9

HEX-O

suspended

EN Hexagonal luminaires & acoustic elements, suitable for single or group installation; Acoustic element made of high quality, self-supporting, recycled PET felt with sound absorbing properties; MODULE in the luminaires' dimensions, FLAT with reduced height, ABSORBER to combine with other housings; acoustically effective cavities; absorption and scattering of sound waves; light housing from extruded aluminium profile, seamlessly welded; powder coated; satinised or microprismatic PMMA cover; energy-eff. LEDs - very good colour rendering; incl. feeder cable; canopy for through wiring; pendant fitting with cable suspension; height adjustment without tools; rear rail for alignment (group)

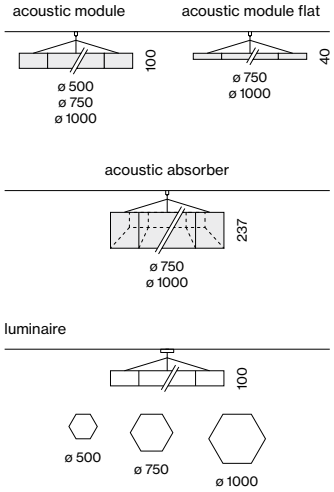
IT Apparecchi & elementi acustici esagonali, adatti per montaggio singolo e a gruppi; Elemento acustico in feltro prodotto con PET riciclato di alta qualità, autoportante e con proprietà fonoassorbenti; MODULE nelle dimensioni degli apparecchi, FLAT con altezza ridotta, ABSORBER per combinazioni con altri corpi ed elementi; cavità efficaci a livello acustico; assorbimento e diffusione del suono; corpo illuminante in profilo in alluminio estruso e saldato senza punti di saldatura; verniciatura a polvere; diffusore satinato o a microprismi in PMMA; LED a risp. energ. - ottima resa cromatica; incl. cavo di alimentazione; rosone per cablaggio passante; sospeso con cavo a sospensione; regolazione altezza senza utensili; guida posteriore per l'allineamento (group)

Quickinfo

PET felt
♻ from recycled material
up to absorption class A
flame retardant version available

3000 K, 4000 K
CRI ≥80, 3 SDCM
up to 142 lm/W
L90 @ 50 000 h
DALI-2
opal, microprismatic (UGR ≤ 19)

Types



Acoustic colours



standard

xilence.xal.com/colours

Luminaire colours



standard

xal.com/colours

Light distribution



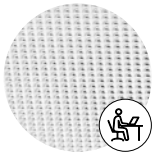
direct



modular system



wide range of colours

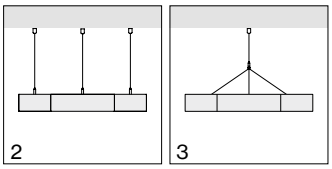


microprismatic (UGR ≤ 19)

Order options

MOUNTING

single mounting	2
group mounting	3



ACOUSTIC COLOUR

white	W
marble grey	D
felt grey	G
black	L
special colours	X

Order options

MOUNTING

single mounting	2
group mounting*	3

*order canopy separately

COLOUR TEMPERATURE

3000 K	5
4000 K	6

CONTROL

DALI-2

LUMINAIRE COLOUR

pure white RAL 9010	7
jet black RAL 9005	8
special colours*	X

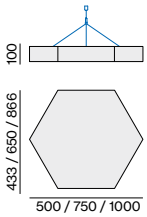
*canopy always in white

LIGHT OPTIC COVER

opal	O
microprismatic (UGR ≤ 19)	P

LUMINOUS FLUX value calculated for 4000 K, colour white, cover microprism.

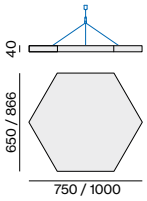
HEX-O MODULE suspended



PET felt | A B C D E, α_w 0.90 | 0.85 NRC | 0.88 SAA

TYPE	L·W·H (mm)	ORDER CODE
MODULE 500	500·433·100	073-69 5 10
MODULE 750	750·650·100	073-69 6 10
MODULE 1000	1000·866·100	073-69 7 10

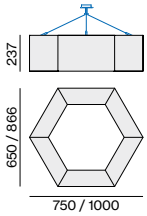
HEX-O MODULE FLAT suspended



PET felt | A B C D E, α_w 0.50 | 0.70 NRC | 0.69 SAA

TYPE	L·W·H (mm)	ORDER CODE
MODULE FLAT 750	750·650·40	073-69 6 20
MODULE FLAT 1000	1000·866·40	073-69 7 20

HEX-O ABSORBER



PET felt | A B C D E, α_w 0.95 | 0.90 NRC | 0.96 SAA

TYPE	L·W·H (mm)	ORDER CODE
ABSORBER 750*	750·650·237	073-69 1640
ABSORBER 1000**	1000·866·237	073-69 1740

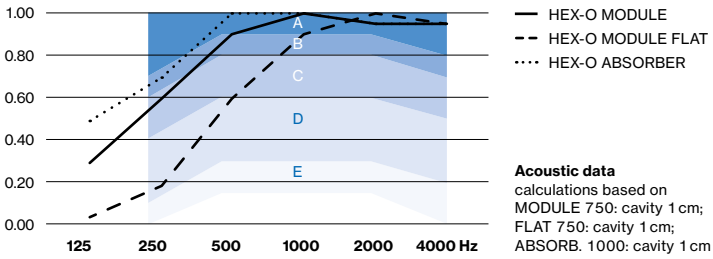
*only in combination with HEX-O 500 or MODULE 500
**only in combination with HEX-O 750, MODULE 750 or MODULE FLAT 750

Acoustic data

Equivalent sound absorption area (A_{eq})

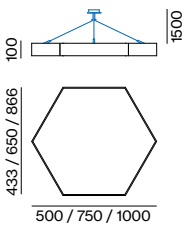
TYPE	125	250	500	1000	2000	4000 Hz
MODULE 500	0.09	0.18	0.30	0.32	0.28	0.32
MODULE 750	0.17	0.33	0.57	0.60	0.53	0.60
MODULE 1000	0.27	0.54	0.91	0.97	0.86	0.97
MODULE FLAT 750	0.03	0.10	0.27	0.40	0.50	0.43
MODULE FLAT 1000	0.06	0.17	0.45	0.67	0.84	0.72
ABSORBER 750	0.42	0.61	0.98	0.86	0.84	0.84
ABSORBER 1000	0.57	0.83	1.33	1.17	1.13	1.13

Sound absorption coefficient (α_p)



Acoustic data
calculations based on MODULE 750: cavity 1 cm; FLAT 750: cavity 1 cm; ABSORB. 1000: cavity 1 cm

HEX-O suspended





UGR ≤ 19 | cd/m² ≤3000 | RG0 IEC 62471 | DALI 2 ADDR. | 220-240V | X-PERT | X-PERT

TYPE	SYSTEM POWER	LUMINOUS FLUX	ORDER CODE
500	16.3 W	2290 lm	073-6 5 1 :: 3
750	35 W	4960 lm	073-6 6 1 :: 3
1000	68 W	9640 lm	073-6 7 1 :: 3

CANOPY

TYPE	L (mm)	ORDER CODE
canopy / feeder cable 5 × 1.5 mm²	1500	005-223241

only for group mounting; one per group needed; can be placed above luminaires or acoustic elements for electrical system configuration see luminaire data sheet at xal.com

C&P Immobilien AG Berlin, DE –
by INNOCAD Architektur ZT GmbH
including lighting design





OLX Group Poznán, PL –
by Trzop Architekci with lighting
design by Pluslighting





The sound of stress-free work

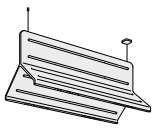


MUSE

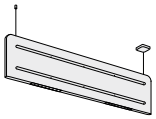
EN The MUSE acoustic luminaire is characterised by its striking design, which is used as a deliberate feature in modern office environments. Thanks to high-quality reflectors, it provides glare-free lighting at the workplace. The MUSE variants – be it as a Y-shaped solution for double workplaces, vertically aligned for single workplaces, or arranged in parallel for open-plan offices – offer a generous absorption surface thus ensuring ideal room acoustics. A symbiosis of light and acoustics.

IT La lampada acustica MUSE presenta un design esclusivo e riflettori di alta qualità che garantiscono una postazione di lavoro priva di riflessi. Sono disponibili la versione a Y che copre 2 postazioni di lavoro, la verticale per le postazioni singole o le orizzontali per gli uffici open space. Le MUSE offrono un'ampia superficie assorbente che rendono l'ambiente acusticamente ottimale. La simbiosi perfetta tra luce e acustica.

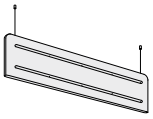
Types



double light suspended

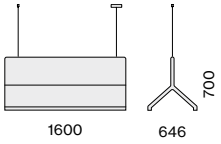


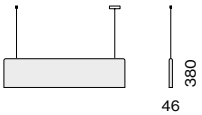
single light suspended



acoustic baffle suspended

Sizes







reddot award 2019
winner

MUSE baffle / light / double light

acoustic suspended

EN Luminaire body or acoustic element made of high quality, self-supporting, recycled PET felt with sound absorbing properties; high quality visual and tactile surface; constructed of 2 shells to form cavities that improve acoustic performance; large sound absorbing surface; pendant fitting with cable suspension; tool-less suspension height adjustment of the luminaire or of the acoustic element; MUSE LIGHT: optimised for the illumination of office workstations; MUSE DOUBLE LIGHT: optimised for the illumination of 2 office workstations opposite each other; incl. transparent feed; light inset made from extruded profile for improved thermal management; high gloss reflector with faceted design; energy-efficient LEDs with very good colour rendering

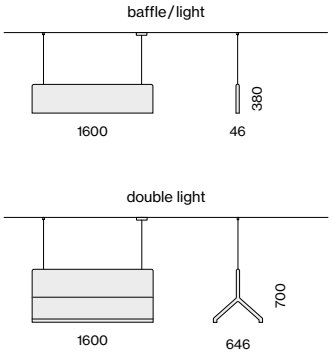
IT Corpo faro ed elemento acustico in feltro prodotto con PET riciclato di alta qualità, autoportante e con proprietà fonoassorbenti; finitura con caratteristiche estetiche e tattili di alta qualità; struttura composta da 2 gusci in modo da formare cavità per migliorare le prestazioni acustiche; ampia superficie fonoassorbente; sospeso con cavo a sospensione; regolazione in altezza senza attrezzi sulla lampada o sull'elemento acustico; MUSE LIGHT: ottimizzato per l'illuminazione di postazioni di lavoro; MUSE DOUBLE LIGHT: ottimizzato per l'illuminazione di 2 postazioni di lavoro disposte l'una di fronte all'altra; incl. cavo di alimentazione trasparente; unità d'illuminazione in profilo di alluminio estruso per migliorare il bilancio termico; riflettore ad alta lucentezza con design sfaccettato; LED ad efficienza energetica con elevata resa cromatica

Quickinfo

PET felt
♻ from recycled material

3000 K, 4000 K
CRI ≥80, 3 SDCM
up to 109 lm/W
L90 @ 50 000 h
DALI-2
reflector (UGR ≤19)

Types

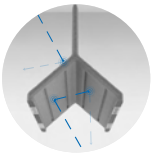


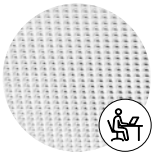
Colours



Light distribution


direct


all-in-one
solution


microprismatic
(UGR ≤ 19)


suitable for
double workstation

Order options

COLOUR TEMPERATURE

3000 K	5
4000 K	6

CONTROL

DALI-2

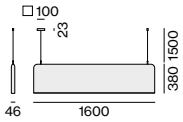
MATERIAL COLOUR

anthracite	B
felt grey	G
bright blue	P
indigo blue	E

canopy always in white;
other colours on request

LIGHT INSET COLOUR

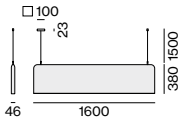
grey cover / chrome reflector



MUSE BAFFLE suspended

PET felt | A B C D E, α_w 0.45 | 0.55 NRC | 0.55 SAA

L (mm)	ORDER CODE
1600	091-101111

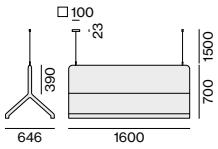


MUSE LIGHT suspended

UGR ≤ 19 | cd/m² ≤ 1500 | DALI 1 ADDR. | 220-240V | X-PERT

PET felt | A B C D E, α_w 0.45 | 0.55 NRC | 0.55 SAA

SYS. POWER	COLOUR TEMP.	LUM. FLUX	L (mm)	ORDER CODE
20 W	3000 K	2080 lm	1600	091-1211 :: 3 F
	4000 K	2200 lm		



MUSE DOUBLE LIGHT suspended

UGR ≤ 19 | cd/m² ≤ 1500 | DALI 1 ADDR. | 220-240V | X-PERT

PET felt | A B C D E, α_w 0.65 | 0.65 NRC | 0.62 SAA

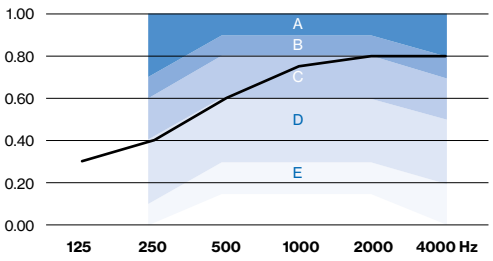
SYS. POWER	COLOUR TEMP.	LUM. FLUX	L (mm)	ORDER CODE
41 W	3000 K	4160 lm	1600	091-1221 :: 3 F
	4000 K	4400 lm		

Acoustic data

Equivalent sound absorption area (A_{eq})

TYPE	125	250	500	1000	2000	4000 Hz
MUSE baffle	0.10	0.20	0.57	0.93	0.97	0.93
MUSE light	0.10	0.20	0.57	0.93	0.97	0.93
MUSE double light	1.03	1.43	2.10	2.67	2.87	2.87

Sound absorption coefficient (α_p)



Acoustic data
calculations based on MUSE double light: cavity 25cm

LUMINOUS FLUX value calculated for cover grey, reflector chrome

Vogel Corporate Solutions GmbH
Würzburg, DE – by Dipl. Ing. FH
Katharina Maatz, designfunktion
Aschaffenburg GmbH



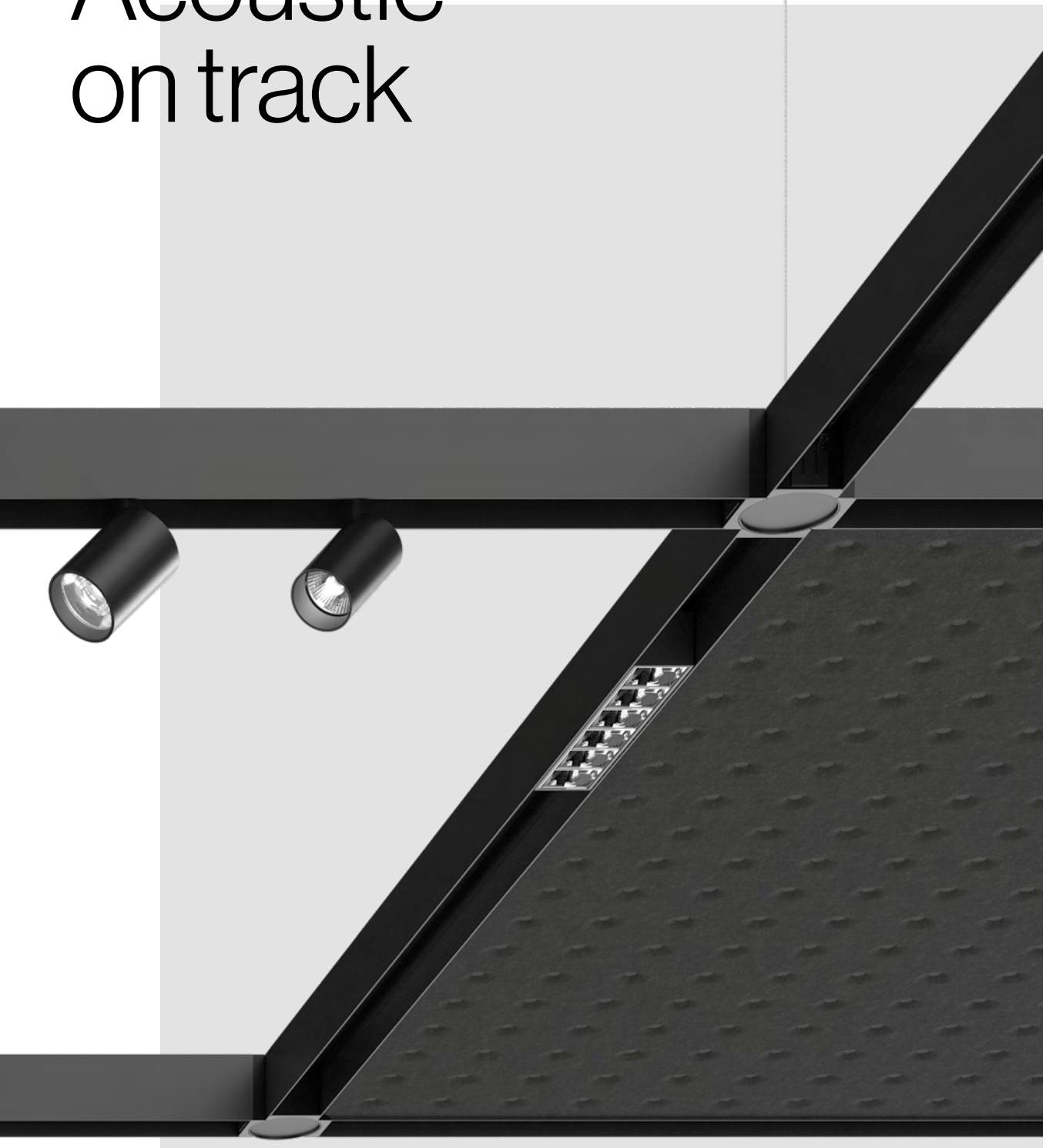




ORF Media-Campus Vienna, AT –
by Riepl Kaufmann Bammer Architektur



Acoustic on track

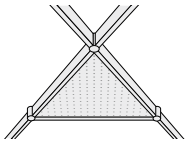


MOVE IT 25 / 45 system

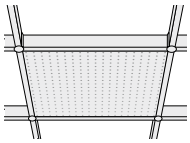
EN Highly effective acoustic elements complete the MOVE IT 25 and MOVE IT 45 track systems and are a must for modern office architecture. The track system profiles can be easily extended with any shape and size of acoustic panel and without the need for tools. An all-in-one solution ensures a particularly appealing appearance thanks to the high-quality embossed surfaces of the acoustic panels. Your bespoke light and acoustic system can be easily adapted to a wide range of room sizes, shapes, and types, facilitating maximum creative freedom – whether you are planning a new build or a spatial redesign.

IT Indispensabili negli interni contemporanei, i binari MOVE IT 25 e MOVE IT 45 si completano con elementi acustici ad alta efficacia: pannelli fonoassorbenti di diverse forme e dimensioni che si possono facilmente installare, senza utensili. Una soluzione all-in-one dal design esclusivo, grazie alla superficie in feltro goffrato. Un sistema personalizzato che unisce luce e acustica, adattabile ad ogni tipologia di ambiente. Massima libertà compositiva, sia nelle nuove costruzione che in quelle esistenti.

Types

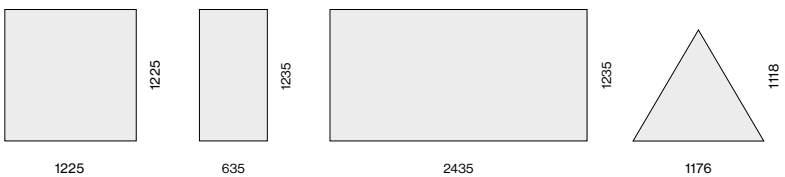


MOVE IT 25
acoustic inlay
ceiling / suspended

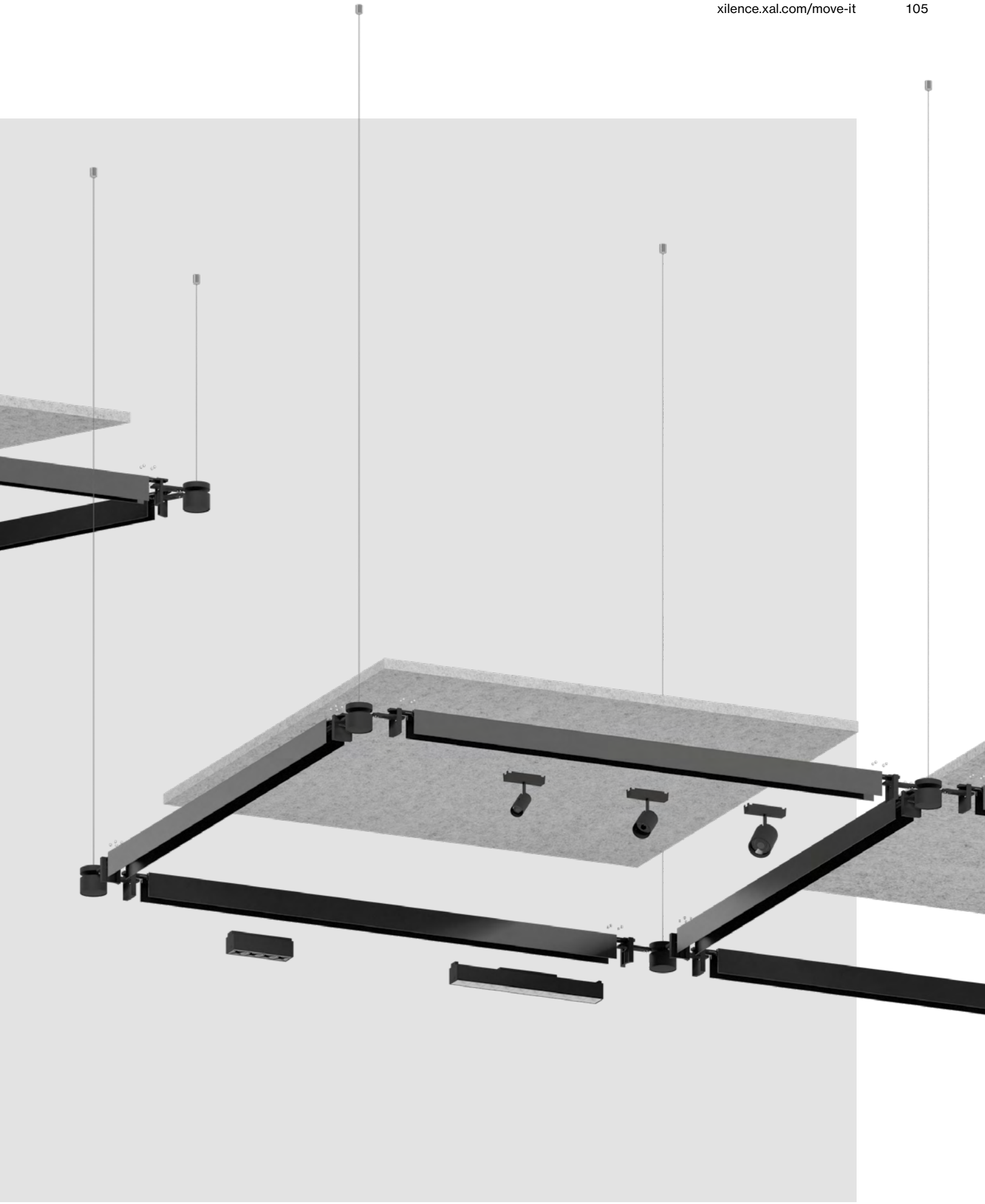


MOVE IT 25 / 45
acoustic inlay
ceiling / suspended

Sizes

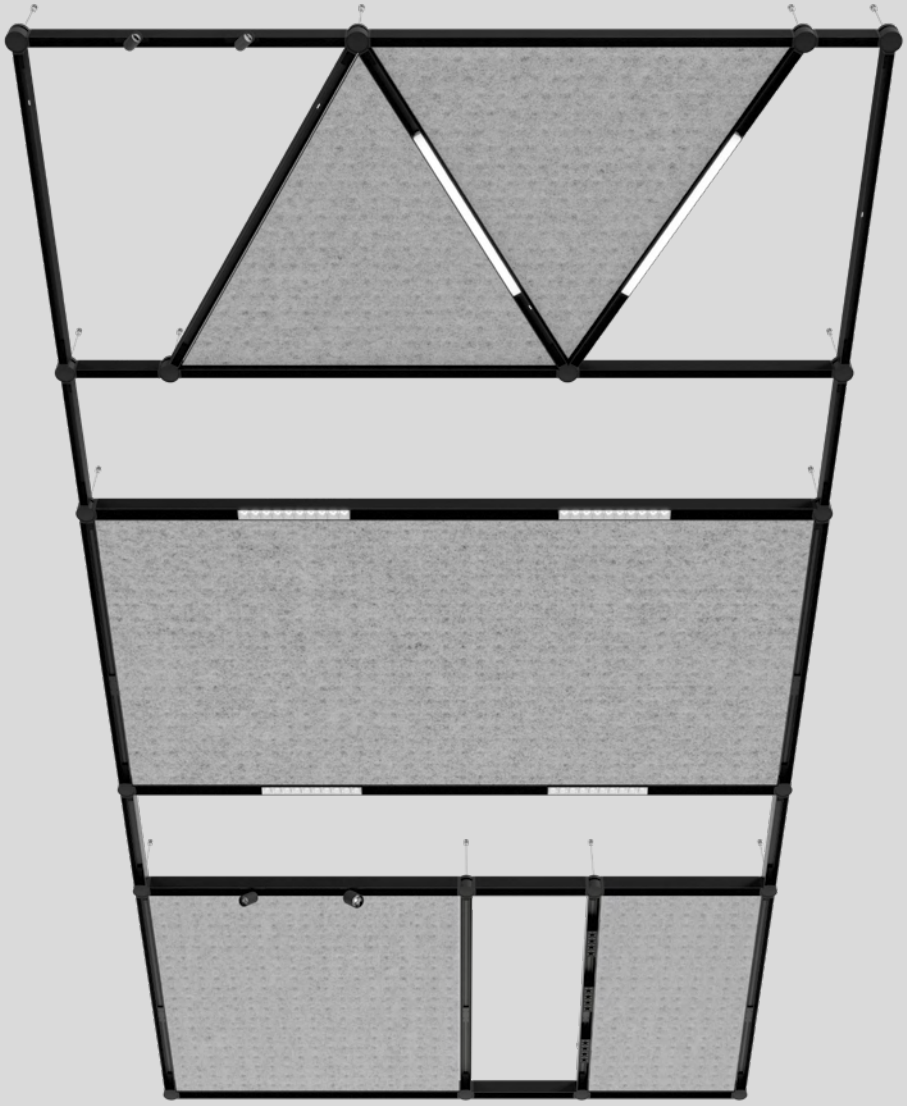






MOVE IT 25
system

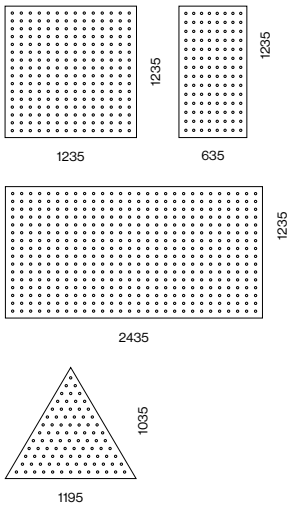
MOVE IT 45
system



Quickinfo

PET felt
♻ from recycled material
up to absorption class A
flame retardant version available

Types



Acoustic colours

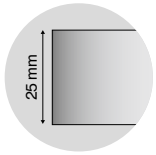


MOVE IT 25/45 system

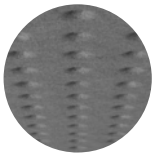
acoustic elements

EN Acoustic element made of high quality, self-supporting, recycled PET felt with sound absorbing properties; different versions: choice of square, rectangular or triangular design (only MOVE IT 25); high quality visual and tactile surface with embossed pattern; absorption of direct sound and sound reflected from the ceiling; this creates high acoustic performance; for installation in the MOVE IT 25/45 suspended system composed of node connectors and profiles; subsequent insertion in already installed MOVE IT suspended system possible; installation without tools

IT Elemento acustico in feltro prodotto con PET riciclato di alta qualità, autoportante e con proprietà fonoassorbenti; diverse versioni: forma a scelta tra quadrata, rettangolare o triangolare; superficie di alta qualità sia dal punto di vista ottico che tattile con motivo in rilievo; possibile presenza di fibre estranee; assorbimento del suono diretto e del suono riflesso dal soffitto; con elevata performance acustica; per l'inserimento nel sistema a sospensione MOVE IT 25/45 con giunti di snodo e profili disponibili; possibilità di inserimento successivo in un sistema a sospensione MOVE IT suspended system già installato; montaggio senza utensili



flat acoustic inlay 25 mm


embossed finish

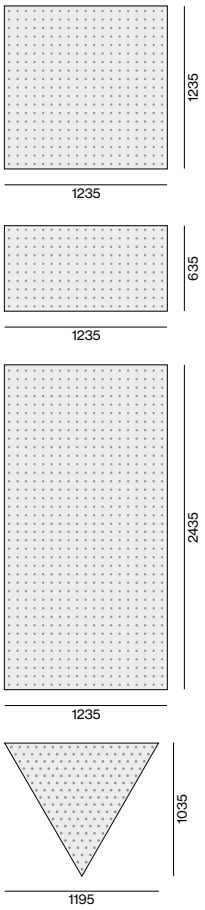

quick and easy to retrofit


sensor inset available

Order options

ACOUSTIC COLOUR

white	W
marble grey	D
anthracite	B
black	L
limestone	S



MOVE IT 25 / 45 acoustic suspended

PET felt

A B C D E
α_w 1.00

1.30 NRC

1.32 SAA

ACOUSTIC ELEMENT

TYPE	L·W·H (mm)	ORDER CODE
square grid inlay	1235·1235·25	0 5 0 - 2 3 1 1 2 1
half grid inlay	635·1235·25	0 5 0 - 2 3 1 2 2 1
double grid inlay	2435·1235·25	0 5 0 - 2 3 1 3 2 1
triangle inlay*	1195·1035·25	0 5 0 - 2 3 1 4 2 1

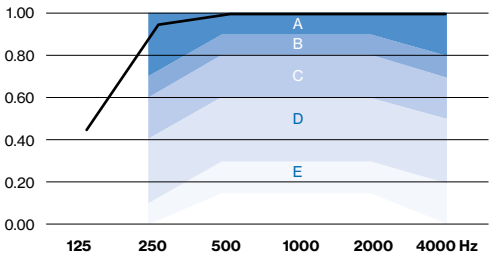
mounting only in MOVE IT 25 / 45 system with NODE connector + track 620 mm, 1220 mm or 2420 mm; *only available for MOVE IT 25 system

Acoustic data

Equivalent sound absorption area (A_{eq})

TYPE	125	250	500	1000	2000	4000 Hz
square grid inlay	0.73	1.47	1.73	2.20	2.67	2.77
half grid inlay	0.57	0.83	0.93	1.27	1.57	1.57
double grid inlay	1.30	2.73	3.20	4.10	4.97	5.23
triangle inlay	0.33	0.57	0.73	0.97	1.27	1.33

Sound absorption coefficient (α_p)



Acoustic data
calculations based on MOVE IT 25/45 acoustic square grid inlay: cavity 40 cm

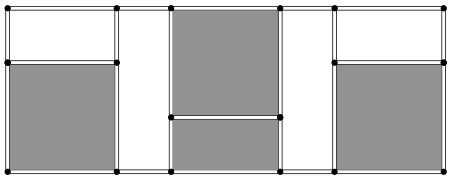
Configuration examples

MOVE IT 25 system

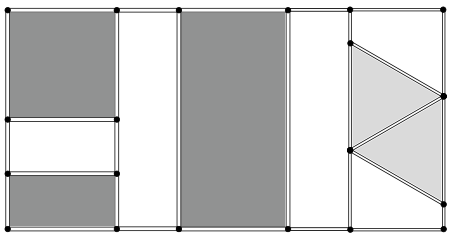


- NODE CONNECTOR
- MOVE IT 25
- MOVE IT 45
- MOVE IT 25 acoustic
- MOVE IT 25 / 45 acoustic

MOVE IT 45 system



MOVE IT 25 / 45 system



MOVE IT 25 system

MOVE IT 45 system

has-to-be GmbH
Radstadt, AT







DAS MORGEN Vitznau, CH





MOVE IT 45 set

acoustic suspended

EN All-in-one acoustic and lighting solution in square or rectangular shape; All-round extruded aluminium profile with 45 mm width groove; optional with indirect light component for additional accentuation of the ceiling; surface anodised or powder coated; incl. linear light insets made of aluminium; high quality reflectors with micro-faceted, aluminum-vaporised surface; for the illumination of office workstations; energy-efficient high power LEDs with very good colour rendering; incl. acoustic element made of high quality, self-supporting, recycled PET felt with sound absorbing properties; high quality visual and tactile surface; high acoustic performance; for suspended mounting (cable suspension); height adjustment without tools

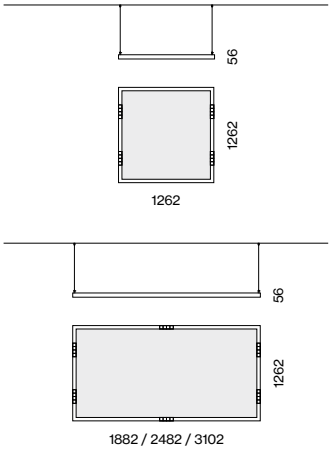
IT Soluzione acustica e illuminotecnica integrata di forma quadrata o rettangolare; Profilo integrale in alluminio estruso con larghezza del giunto di 45 mm; in opzione con aggiunta di luce indiretta per accenti sul soffitto; superficie anodizzata o verniciatura a polvere; incl. inserti luce lineare in alluminio; riflettori di alta qualità con superficie a microfaccette e vaporizzata in alluminio; per l'illuminazione di postazioni di lavoro; LED high power a risparmio energetico con ottima resa cromatica; incl. elemento acustico in feltro prodotto con PET riciclato di alta qualità, autoportante e con proprietà fonoassorbenti; finitura con caratteristiche estetiche e tattili di alta qualità; alte prestazioni acustiche; montaggio a sospensione (cavo di sospensione); regolazione altezza senza utensili

Quickinfo

PET felt
♻ from recycled material
up to absorption class A
flame retardant version available

3000 K, 4000 K, TW
CRI ≥80, 3 SDCM
UGR ≤ 10 / 65° ≤ 1500 cd/m²
up to 121 lm/W
L80 @ 50 000 h
DALI-2

Types



Luminaire colours



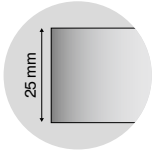
Acoustic colours



Light distributions




all-in-one solution



flat acoustic inlay 25 mm


easy mounting


sensor inset available

Order options

COLOUR TEMPERATURE

3000 K indirect

CONTROL

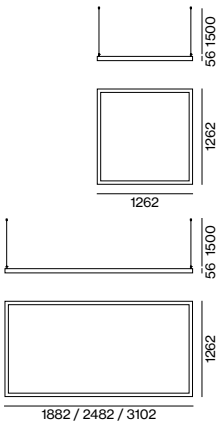
DALI-2

MATERIAL COLOUR

● jet black RAL 9005	8
◒ traffic white 9016 / jet black 9005	P

ACOUSTIC COLOUR

○ white	W
● marble grey	D
● anthracite	B
● black	L
● limestone	S



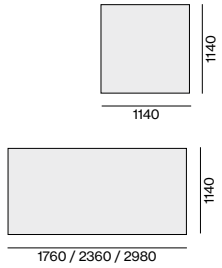
MOVE IT 45 set acoustic suspended

CRI ≥ 90 · DALI-2 · 48 V · TRACK max. 6,67 A

INSTALLATION TRACK incl. cable suspension and converter

TYPE	SYSTEM POWER	LUMINOUS FLUX	ORDER CODE
SMALL	direct	-	091-211113
	54 W indirect	↥ 6220 lm	091-212113
MEDIUM	direct	-	091-211213
	65 W indirect	↥ 7510 lm	091-212213
LARGE	direct	-	091-211313
	86 W indirect	↥ 9840 lm	091-212313
X-LARGE	direct	-	091-211413
	92 W indirect	↥ 11100 lm	091-212413

order acoustic inlay and light insets separately



PET felt · A B C D E, α_w 1.00 · 1.30 NRC · 1.32 SAA

ACOUSTIC INLAY

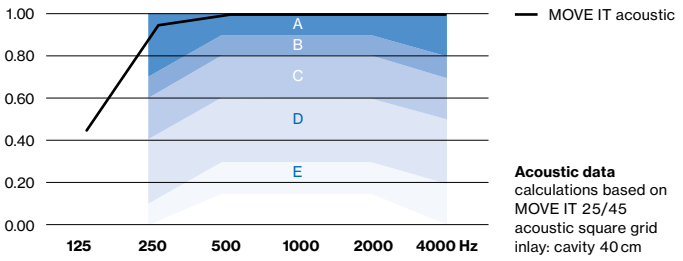
TYPE	L·W·H (mm)	ORDER CODE
SMALL	1140·1140·25	091-219111
MEDIUM	1760·1140·25	091-219211
LARGE	2360·1140·25	091-219311
X-LARGE	2980·1140·25	091-219411

Acoustic data

Equivalent sound absorption area (A_{eq})

TYPE	125	250	500	1000	2000	4000 Hz
SMALL	0.62	1.25	1.48	1.87	2.27	2.36
MEDIUM	0.96	1.93	2.28	2.89	3.51	3.64
LARGE	1.29	2.59	3.06	3.88	4.70	4.88
X-LARGE	1.63	3.27	3.86	4.90	5.94	6.16

Sound absorption coefficient (α_p)



Acoustic data
calculations based on MOVE IT 25/45 acoustic square grid inlay: cavity 40 cm

Order options

COLOUR TEMPERATURE

3000 K	5
4000 K	6
tunable white 2700 – 5000 K*	D

*DALI-2 DT8

LIGHT OPTIC

medium square (UGR ≤ 10)	E
flood square (UGR ≤ 19)	F

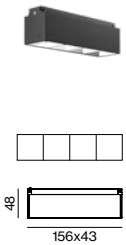
LIGHT OPTIC COLOUR

chrome reflector	0
black reflector	B

MATERIAL COLOUR

● jet black RAL 9005

INSET POWER in watts is the current consumption excluding any ballast
LUMINOUS FLUX value calculated for colour black, reflector chrome



LIGHT INSET

UGR ≤ 10 · CRI ≥ 90 · cd/m² ≤ 1500 · DALI 1 ADDR. · 48 V

INSET POWER	COLOUR TEMP.	LUMINOUS FLUX	ORDER CODE
13.6 W	3000 K	up to 1350 lm	090-9L43▲B01
	4000 K	up to 1440 lm	

order 4 insets for SMALL, 6 for MEDIUM and LARGE, 8 for X-LARGE



DALI-2 SENSOR

TYPE	L·W·H (mm)	ORDER CODE
ESSENTIAL sensor (brightness & presence)	43·43·48	050-2063378
SENSE sensor (brightness, presence, temperature, sound pressure, humidity, CO_2)	43·43·48	050-2063278





Acoustic elements



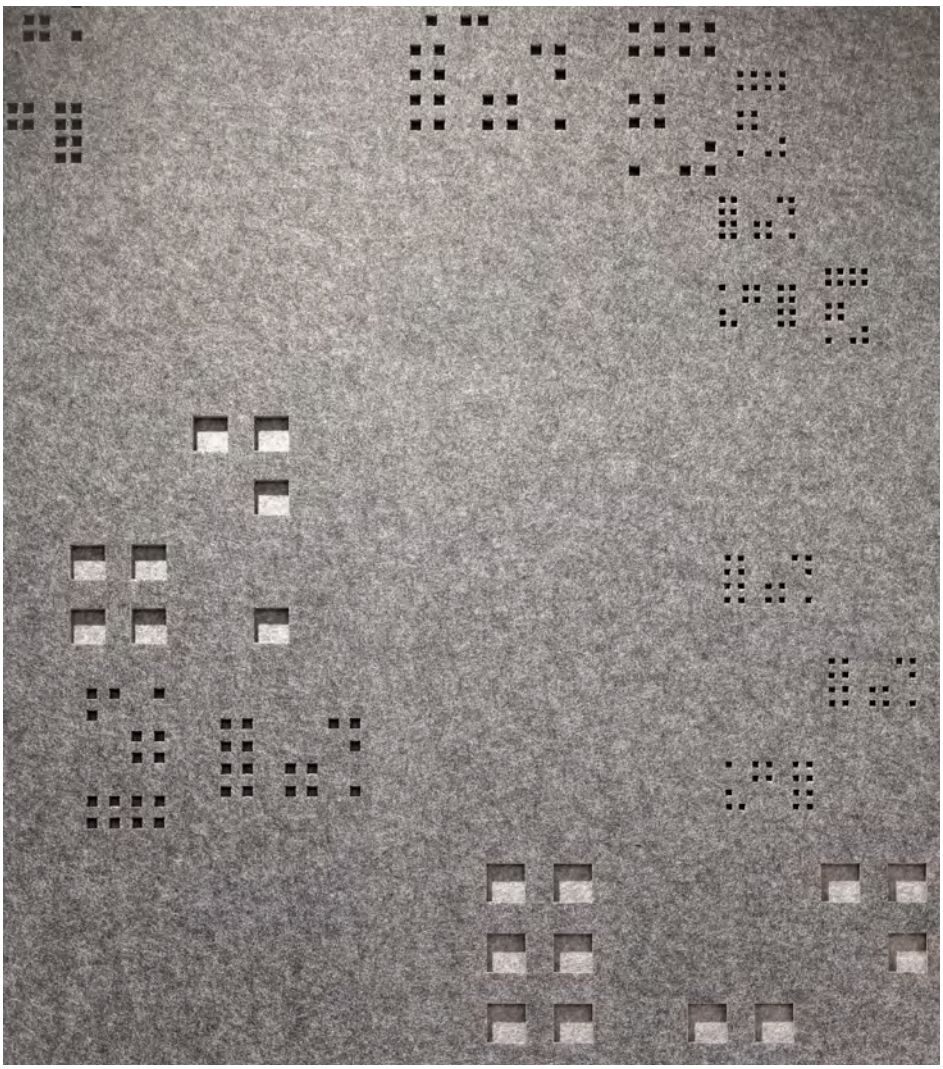


Fractal harmony

EN The innovative acoustic wall panels with fractal patterns signify a breakthrough in biophilic design. They are based on the research of Prof. Dr. Richard Taylor (University of Oregon & Fractals Research Laboratory, USA) and 13&9, who combine design and science in a unique way. Studies have shown that these patterns reduce stress by up to 60 per cent, increase cognitive performance, and promote concentration. Discover a design solution that both enhances rooms aesthetically, while also sustainably improving well-being.

IT Gli innovativi pannelli acustici a parete con motivi frattali, rappresentano una svolta nel design biofilico. Si basano sulle ricerche condotte dal Prof. Dr. Richard Taylor (University of Oregon & Fractals Research Laboratory, USA) e dallo studio 13&9 che mirano a combinare in modo unico design e scienza. Gli studi dimostrano che questi modelli riducono lo stress anche del 60%, aumentano le prestazioni cognitive e favoriscono la concentrazione. Andate alla scoperta di una soluzione di design che non si limita a valorizzare l'estetica degli ambienti ma riesce anche a migliorare il benessere in modo sostenibile.

design by 13&9





Acoustic calculations

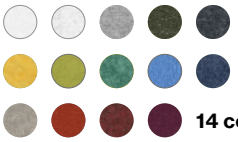
EN Our room acoustics experts will help you optimise your building, be it a new construction or an acoustic retrofit. A standardised calculation of the reverberation time, based on your building plans, facilitates the targeted use of our acoustic solutions. This means we can create a pleasant atmosphere in every room, tailored to its use. We are looking forward to advising you – please do get in touch.

IT I nostri esperti ti aiuteranno ad ottimizzare l'acustica di ogni ambiente, sia negli edifici esistenti che in quelli di nuova costruzione. Un calcolo a norma del tempo di riverbero, basato sui progetti dell'edificio, permette di usare in modo mirato le soluzioni acustiche. Ciò permetterà di creare interni più accoglienti e acusticamente adeguati. Saremo lieti di offrirti la nostra consulenza. Contattaci.

Diversity of colours

EN Colours decisively influence the effect of rooms and buildings. Their purpose is to support and round off the architectural vision, which is why our acoustic elements are available in a wide range of classic and modern colours. Would you like even more creative freedom? All elements can also be customised in a colour of your choice, with virtually no impact on the acoustic performance.

IT I colori degli ambienti e degli edifici incidono profondamente sulla vita delle persone. Sono in grado di arricchirne ulteriormente una architettura, ragione per cui i nostri elementi acustici sono disponibili in l'vasta gamma cromatica, con tonalità sia classiche che moderne. Voglia di libertà creativa? I colori dei nostri prodotti fonoassorbenti sono personalizzabili e le prestazioni acustiche rimangono invariate.



14 colours

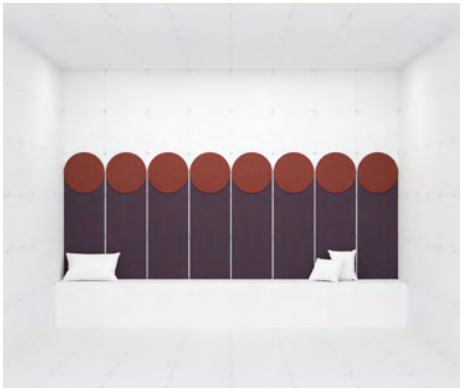


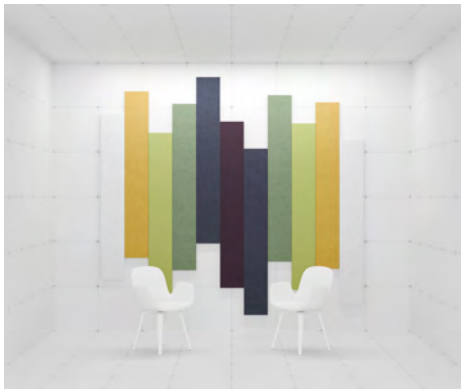
High-performing shapes

EN Our acoustic elements made of recycled synthetic fleece, are aesthetically intriguing, and, above all, highly effective in terms of acoustics. The wide range of available shapes provides you with the greatest possible creative freedom. Choose from round and angular shapes, as well as slats of different lengths, to match your interior concept.

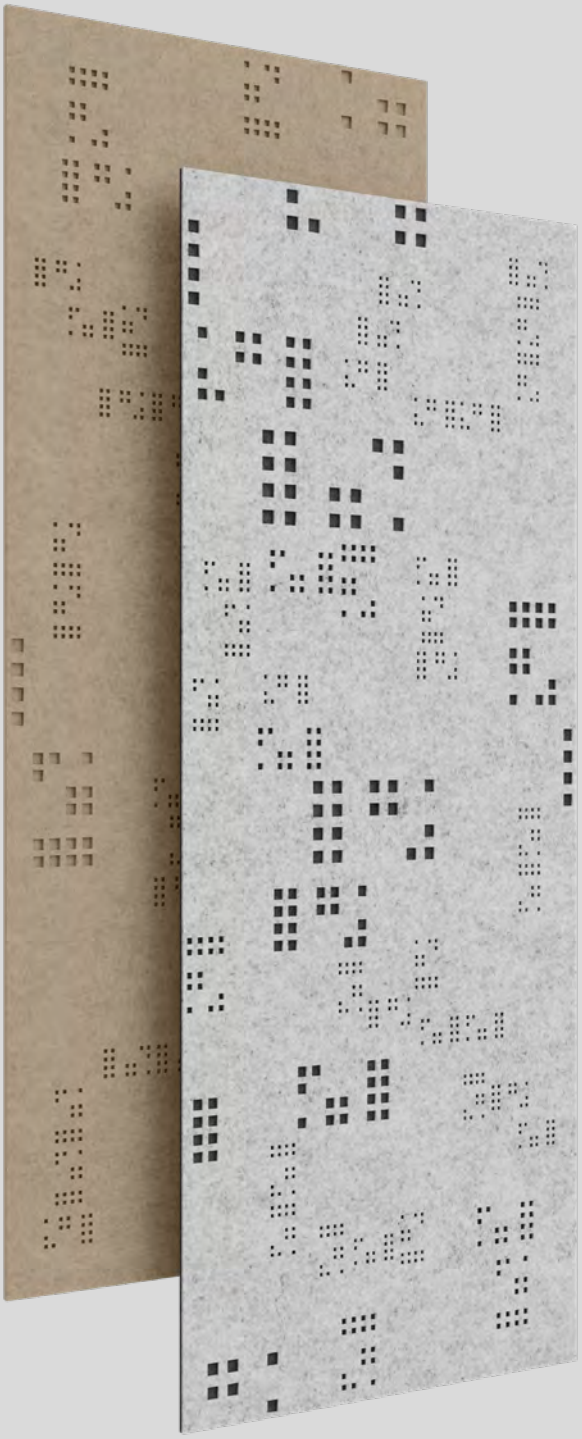
IT I nostri elementi acustici in feltro da PET riciclato sono esteticamente interessanti e soprattutto molto efficaci in termini di fonoassorbimento. Sono disponibili in una vasta gamma di forme, garantendo una maggior libertà di creazione: tonde e squadrate, oppure in lamelle di diverse lunghezza che si adattano ad ogni progetto.











design by
13&9

FRACTAL CODE

acoustic wall panel

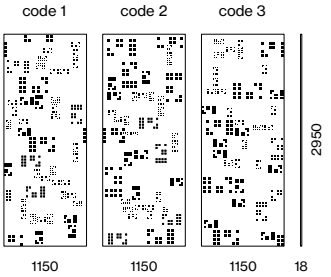
EN Acoustically effective wall panel made of high quality, recycled PET felt with sound absorbing properties; constructed from two 9 mm thick layers; fractal code hole pattern inspired by nature and scientifically designed to reduce stress; 3 different panel variants for as little pattern repetition as possible; high quality visual and tactile surface; optionally monochrome or 2-coloured; can be used as a large-format wall covering to significantly improve room acoustics; on-site cutting possible

IT Pannello a parete acusticamente efficace in feltro di PET riciclato di alta qualità con proprietà fonoassorbenti; costituito da due strati di 9 mm di spessore; motivo a codice frattale con fori ispirato alla natura, sviluppato in base a criteri scientifici per ridurre lo stress; 3 diverse varianti di pannello per ridurre al minimo la ripetizione del motivo; finitura con caratteristiche estetiche e tattili di alta qualità; a scelta, monocromatico o a 2 colori; può essere tagliato su misura sul posto

Quickinfo

acoustic wall panel
stress-reducing fractal codes
various colour combinations
precise cut-outs
large acoustic surface
cut on site
flame retardant version available

Types



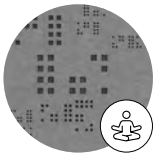
Colours



monochromatic



two-coloured



stress-reducing fractal codes



two-coloured variants



large acoustic surface

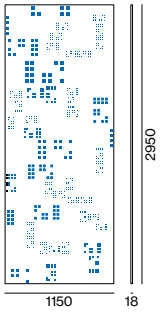
Order options

MONOCHROMATIC

marble grey / marble grey	D
anthracite / anthracite	B
limestone / limestone	S

TWO-COLOURED

marble grey / anthracite	A
anthracite / marble grey	C
limestone / anthracite	F



FRACTAL CODE acoustic wall panel

PET felt

A B C D E
α_w 0.45

0.60 NRC

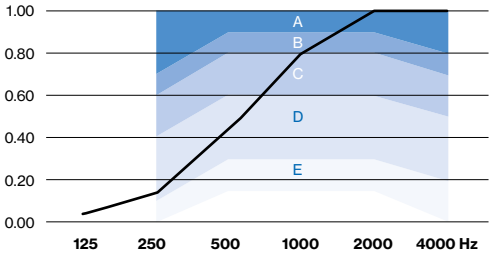
0.60 SAA

TYPE	L·W·H (mm)	ORDER CODE
fractal code 1	2950·1150·18	091-390111
fractal code 2	2950·1150·18	091-390211
fractal code 3	2950·1150·18	091-390311

Acoustic data

Sound absorption coefficient (α_p)

TYPE	125	250	500	1000	2000	4000 Hz
fractal code 1/2/3	0.05	0.15	0.45	0.80	1.00	1.00



Acoustic data
calculations based on PET FELT 18 mm, cavity 0 cm

XALec Graz, AT –
by INNOCAD Architektur ZT GmbH









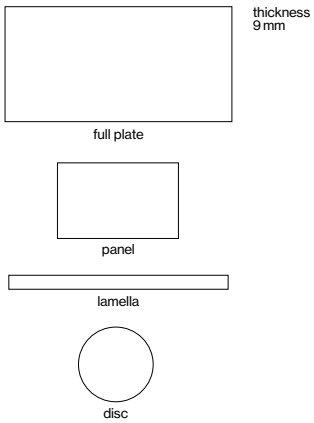




Quickinfo

PET felt
♻ from recycled material
up to absorption class A
flame retardant version available

Types



Colours



FELT 9

acoustic surface

EN Acoustic element made of 9 mm thick, high quality, self-supporting, recycled PET felt with sound absorbing properties; optionally cut round, rectangular, strip-shaped or without cutting as a full-format element; high quality visual and tactile surface; large selection of colours and formats; can be used as wall or ceiling covering to significantly improve room acoustics; packaging unit depends on format

IT Elemento acustico in feltro di PET riciclato di 9 mm di spessore, autoportante e di alta qualità, con proprietà fonoassorbenti; può essere tagliato rotondo, rettangolare, a forma di striscia o senza taglio come elemento a pieno formato; finitura con caratteristiche estetiche e tattili di alta qualità; ampia scelta di colori e formati; può essere utilizzato come rivestimento per pareti o soffitti, per un notevole miglioramento dell'acustica dell'ambiente; l'unità di imballaggio dipende dal formato

Order options

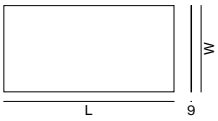
MATERIAL COLOUR	
royal yellow	Y
spring green	H
bottle green	T
bright blue	P
indigo blue	E
felt grey	G
anthracite	B
limestone	S
autumn red	R
oxide red	K
aubergine	O

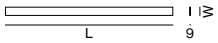
LENGTH	L
295 mm	0295
590 mm	0590
885 mm	0885
1180 mm	1180
1475 mm	1475
2360 mm	2360
2950 mm*	2950

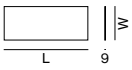
WIDTH	W
295 mm	0295
590 mm	0590
885 mm	0885
1180 mm	1180
1475 mm*	1475

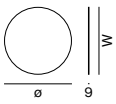
DIAMETER	D
295 mm	0295
590 mm	0590
885 mm	0885
1180 mm	1180
1475 mm*	1475

*only for white, marble grey, black









FELT 9 surface

PET felt | A B C D E, α_w 0.85 | 0.80 NRC | 0.80 SAA

FULL PLATE

COLOUR	L·W·H (mm)	ORDER CODE
white	3000·1520·9	091-71W-3000x1520
marble grey	3000·1520·9	091-71D-3000x1520
black	3000·1520·9	091-71L-3000x1520
other colours	2440·1220·9	091-71 ◪ -2440x1220

the packaging unit is one for a full plate

LAMELLA

COLOUR	L·W·H (mm)	ORDER CODE
white	2950·148·9	091-72W-2950x0148
marble grey	2950·148·9	091-72D-2950x0148
black	2950·148·9	091-72L-2950x0148
other colours	2360·148·9	091-72 ◪ -2360x0148

PANEL

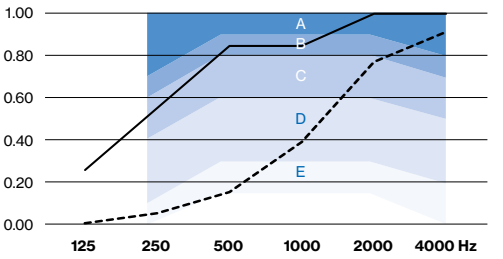
COLOUR	L·W (mm)	ORDER CODE
white	see table left	091-72W-LLLLxWWWW
marble grey	see table left	091-72D-LLLLxWWWW
black	see table left	091-72L-LLLLxWWWW
other colours	see table left	091-72 ◪ -LLLLxWWWW

DISC

COLOUR	Ø (mm)	ORDER CODE
white	see table left	091-73W-DDDD
marble grey	see table left	091-73D-DDDD
black	see table left	091-73L-DDDD
other colours	see table left	091-73 ◪ -DDDD

Acoustic data

Sound absorption coefficient (α_p)

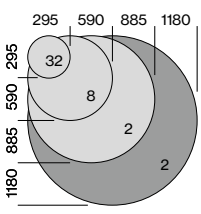


Acoustic data
calculations based on FELT 9 full plate;
surface: cavity 0 cm
suspended: cavity 20 cm

Packaging units

MATERIAL COLOUR other colours

148 \ 295	590	885	1180	1475	2360
148					8
295	32	16	10	8	4	4
590		8	5	4	2	2
885			2	2	1	1
1180				2	1	1

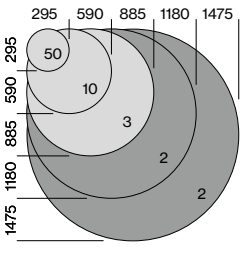


standard delivery conditions

additional shipping costs will apply due to oversize

MATERIAL COLOUR white, marble grey, black

148 \ 295	590	885	1180	1475	2360	2950
148						10
295	50	25	16	11	10	5	5
590		10	6	5	4	2	2
885			3	2	2	1	1
1180				2	2	1	1
1475					2	1	1





0.78 > **0.63**
seconds

acoustic planning ➔ p.166



MOVE IT 10
system



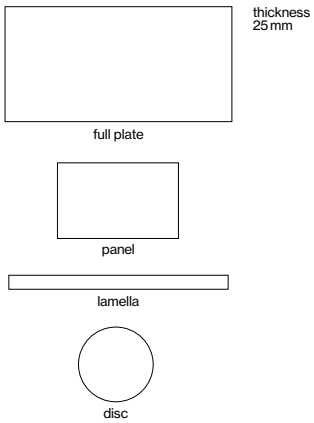




Quickinfo

PET felt
♻ from recycled material
up to absorption class A
flame retardant version available

Types



Colours



FELT 25

acoustic surface

EN Acoustic element made of 25 mm thick, high quality, self-supporting, recycled PET felt with sound absorbing properties; optionally cut round, rectangular, strip-shaped or without cutting as a full-format element; high quality visual and tactile surface; large selection of colours and formats; can be used as wall or ceiling covering to significantly improve room acoustics; packaging unit depends on format

IT Elemento acustico in feltro di PET riciclato di 25 mm di spessore, autoportante e di alta qualità, con proprietà fonoassorbenti; può essere tagliato rotondo, rettangolare, a forma di striscia o senza taglio come elemento a pieno formato; finitura con caratteristiche estetiche e tattili di alta qualità; ampia scelta di colori e formati; può essere utilizzato come rivestimento per pareti o soffitti, per un notevole miglioramento dell'acustica dell'ambiente; l'unità di imballaggio dipende dal formato

Order options

LENGTH	L
295 mm	0295
590 mm	0590
885 mm	0885
1180 mm	1180
1475 mm	1475
2360 mm	2360
2950 mm	2950

WIDTH	W
295 mm	0295
590 mm	0590
885 mm	0885
1180 mm	1180
1475 mm	1475

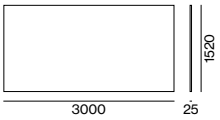
DIAMETER	D
295 mm	0295
590 mm	0590
885 mm	0885
1180 mm	1180
1475 mm	1475

standard delivery conditions

additional shipping costs will apply due to oversize

FELT 25 surface

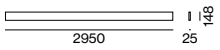
PET felt | A B C D E α_w 1.00 | 1.05 NRC | 1.02 SAA



FULL PLATE

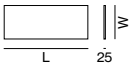
COLOUR	L·W·H (mm)	ORDER CODE
white	3000·1520·25	091-81W-3000x1520
marble grey	3000·1520·25	091-81D-3000x1520
anthracite	3000·1520·25	091-81B-3000x1520
black	3000·1520·25	091-81L-3000x1520
limestone	3000·1520·25	091-81S-3000x1520

the packaging unit is one for a full plate



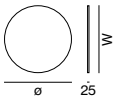
LAMELLA

COLOUR	L·W·H (mm)	ORDER CODE
white	2950·148·25	091-82W-2950x0148
marble grey	2950·148·25	091-82D-2950x0148
anthracite	2950·148·25	091-82B-2950x0148
black	2950·148·25	091-82L-2950x0148
limestone	2950·148·25	091-82S-2950x0148



PANEL

COLOUR	L·W (mm)	ORDER CODE
white	see table left	091-82W-LLLLxWWWW
marble grey	see table left	091-82D-LLLLxWWWW
anthracite	see table left	091-82B-LLLLxWWWW
black	see table left	091-82L-LLLLxWWWW
limestone	see table left	091-82S-LLLLxWWWW

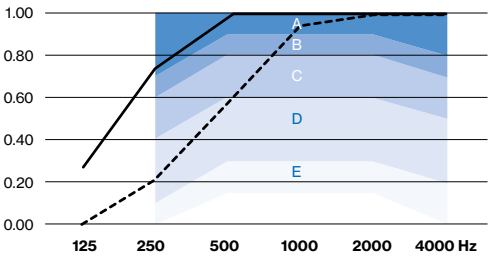


DISC

COLOUR	Ø (mm)	ORDER CODE
white	see table left	091-83W-DDDD
marble grey	see table left	091-83D-DDDD
anthracite	see table left	091-83B-DDDD
black	see table left	091-83L-DDDD
limestone	see table left	091-83S-DDDD

Acoustic data

Sound absorption coefficient (α_p)

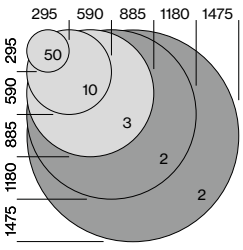


Acoustic data
calculations based on FELT 25 full plate;
surface: cavity 0 cm
suspended: cavity 20 cm

Packaging units

MATERIAL COLOUR white, marble grey, anthracite, black, limestone

L \ W	295	590	885	1180	1475	2360	2950
148							10
295	50	25	16	11	10	5	5
590		10	6	5	4	2	2
885			3	2	2	1	1
1180				2	2	1	1
1475					2	1	1



TEST-FUCHS GmbH Groß-Siegharts, AT –
by ARKFORM ZT GmbH







Customised solutions





Your vision
our mission

EN Unleash your creativity and we will realise your unique project. Be it innovative acoustic luminaires, room-acoustic retrofitting, or complete acoustic ceiling systems: no requirement is too specific for us to realise your customised solution for light and room acoustics. We start with a detailed initial discussion, create the optimal acoustic room plan, and develop a lighting concept with you that is both aesthetically appealing and acoustically effective. Our team will support you from the initial idea to the final implementation, ensuring that the result is exactly what you envisioned.

IT Dai spazio alla creatività. Alla realizzazione del progetto illuminotecnico e acustico ci pensiamo noi. Non ci sono limiti per le tue richieste, le possiamo personalizzare tutte: le lampade acustiche, la riqualificazione acustica degli ambienti o la creazione di controsoffitti acustici. Dal briefing passiamo alla definizione del progetto acustico ottimale e infine, insieme a te, allo sviluppo del concept che sarà efficace in termini di fonoassorbimento nonché esteticamente interessante. Saremo lieti di offrire il nostro supporto, dall'idea iniziale all'esecuzione materiale, in modo che il risultato risponda alle tue aspettative.





Anything is possible

EN There are no limits to your creativity: Design your own individually shaped, three-dimensional acoustic elements or have embossed and precisely cut patterns created on the surfaces of your choice. All elements are available in a wide range of colours or in custom colours of your choice. Together, we will make your vision a reality.

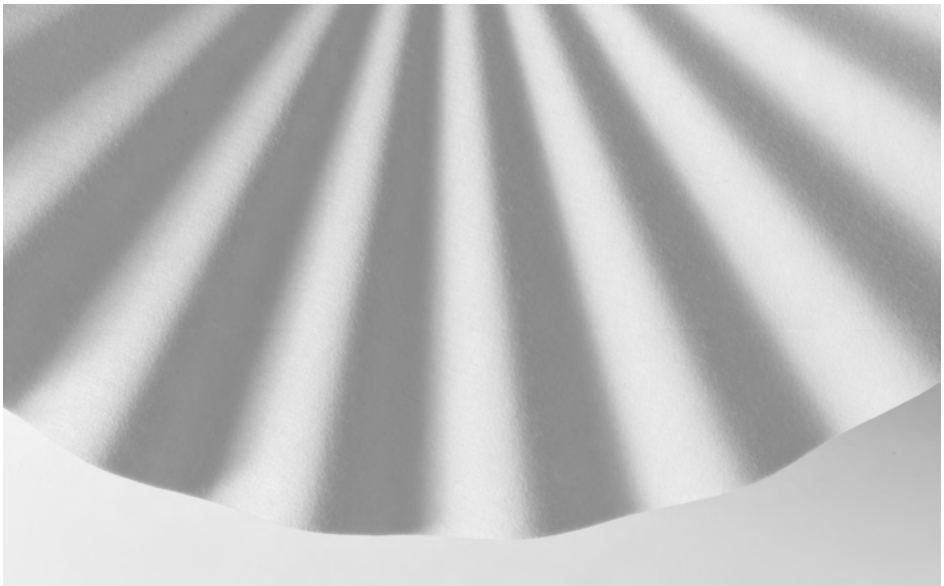
IT Non c'è un limite alla creatività. Puoi decidere la forma che gli elementi acustici tridimensionali avranno, la loro dimensione e la goffratura da eseguire sui pannelli. Il tutto disponibile in una vasta gamma di colori. Insieme possiamo trasformare il tuo progetto in realtà.



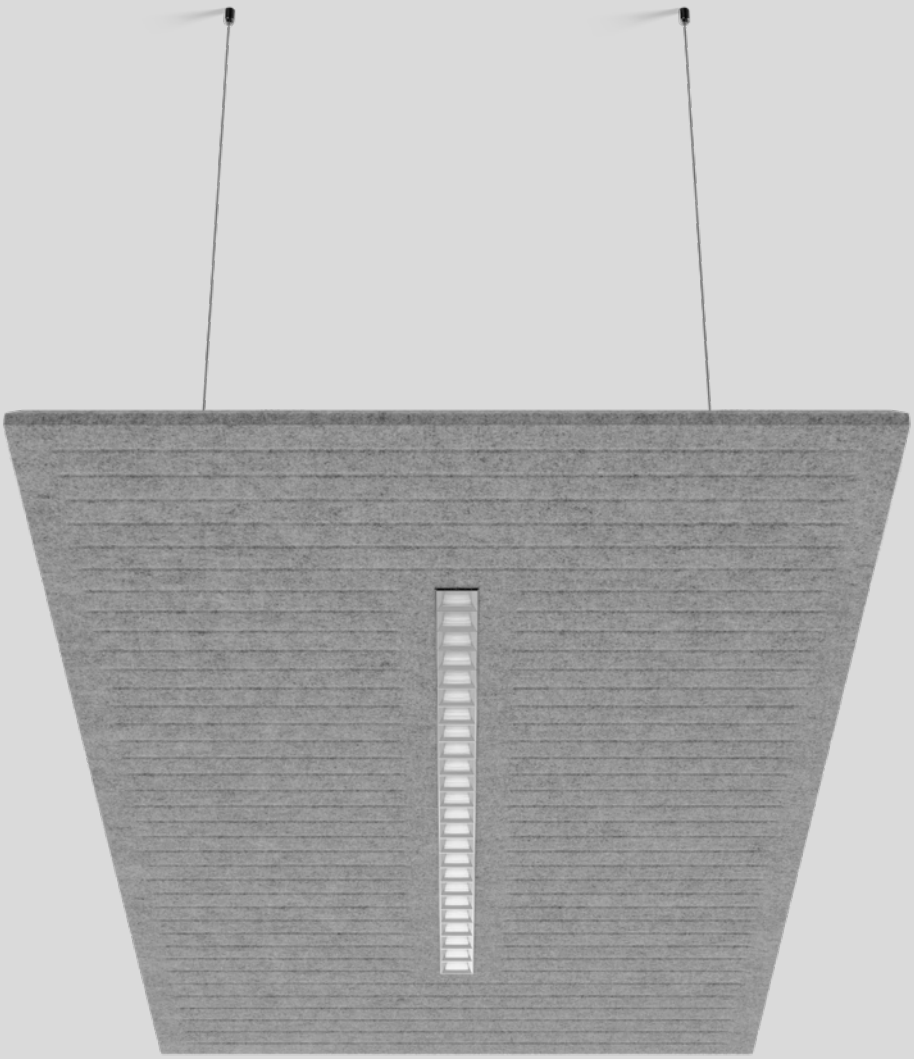
Soft embossing



V-cuts



3D shaping



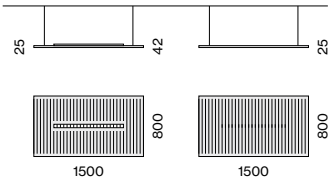
NEVA panel rectangular

acoustic suspended

Quickinfo

acoustic panels for workstations
combine with square shapes
with and without lighting
high acoustic performance
flame retardant version available
suitable for workstations (UGR ≤ 19)

Types



Customisable options

include sensors
additional indirect lighting
custom colour (painted)
embossing transversely / longitudinally
wall mounting (only acoustic version)

Colours



acoustic



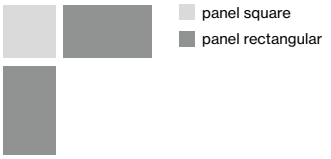
luminaire

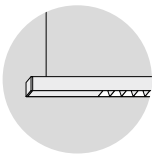
Light distributions



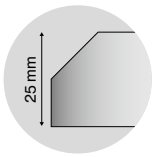
direct direct indirect

Arrangement options





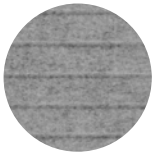
based on BETO system



flat design 25 mm



DIN EN 12464-1 UGR ≤ 19

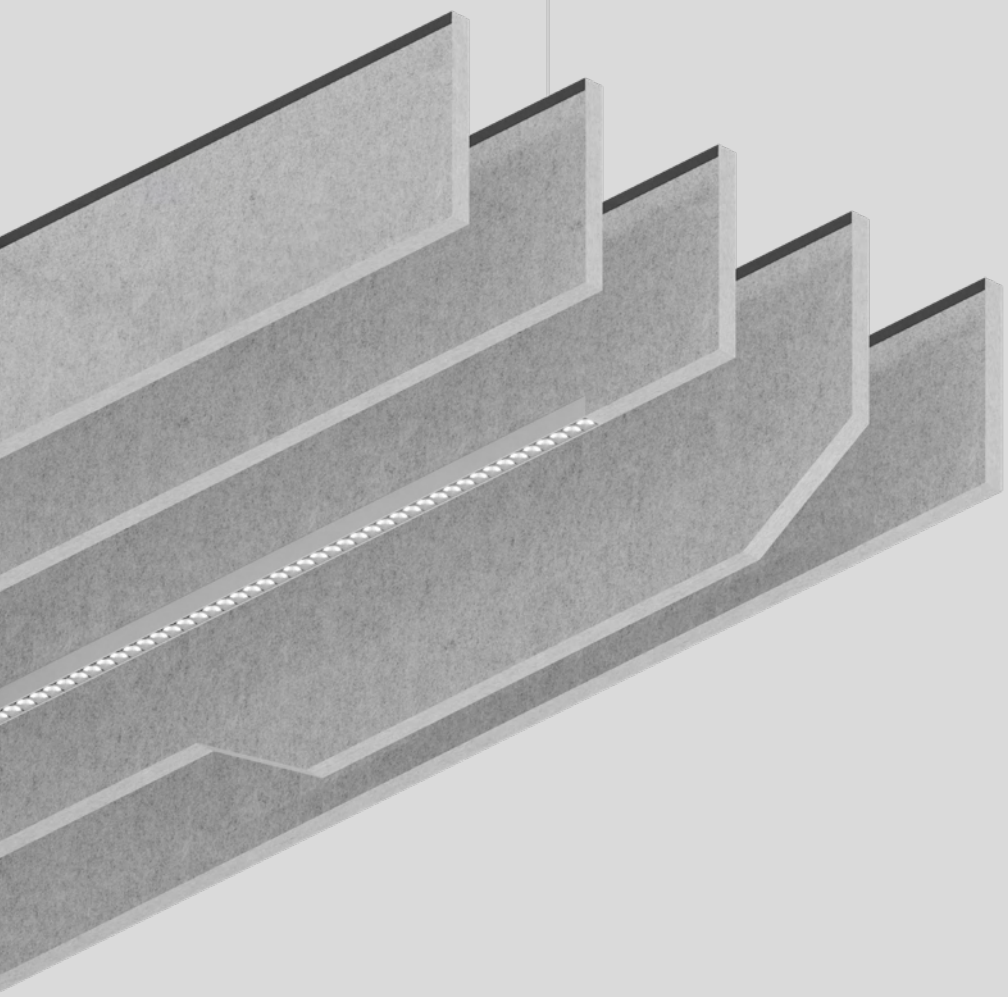


embossed acoustic panel









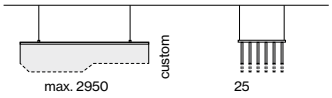
baffle 25

acoustic luminaire suspended

Quickinfo

slim baffle system
with or without louver (UGR ≤ 19)
design lower edge
high acoustic performance
flame retardant version available

Types

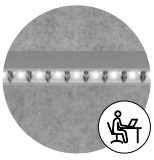


Customisable options
height
length
distance
design of lower edge
custom colour (painted)

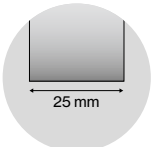
Colours

Light distribution

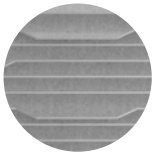



DIN EN 12464-1
UGR ≤ 19


combinable with
XAL products



slim width
25 mm

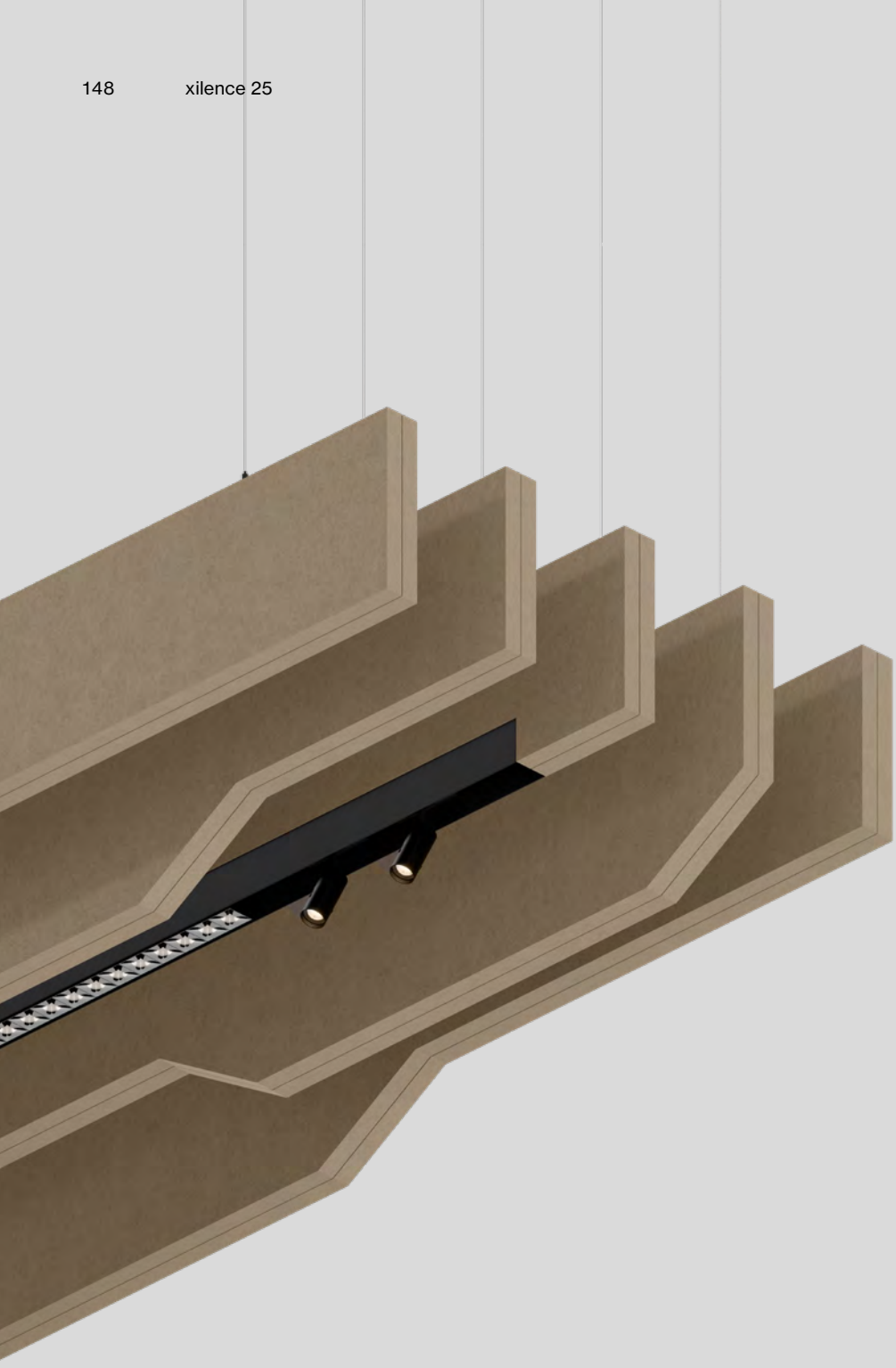

modular
system



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by INNOCAD Architektur ZT GmbH







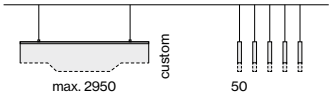
baffle 50

acoustic luminaire suspended

Quickinfo

baffle system
with or without track system
design lower edge
high acoustic performance
flame retardant version available

Types



Customisable options

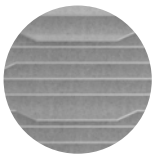
height
length
distance
design of lower edge
custom colour (painted)

Colours

Light distribution


direct


DIN EN 12464-1
UGR ≤ 19


modular
system



XAL Office
Leonding, AT

XAL Office Leonding, AT



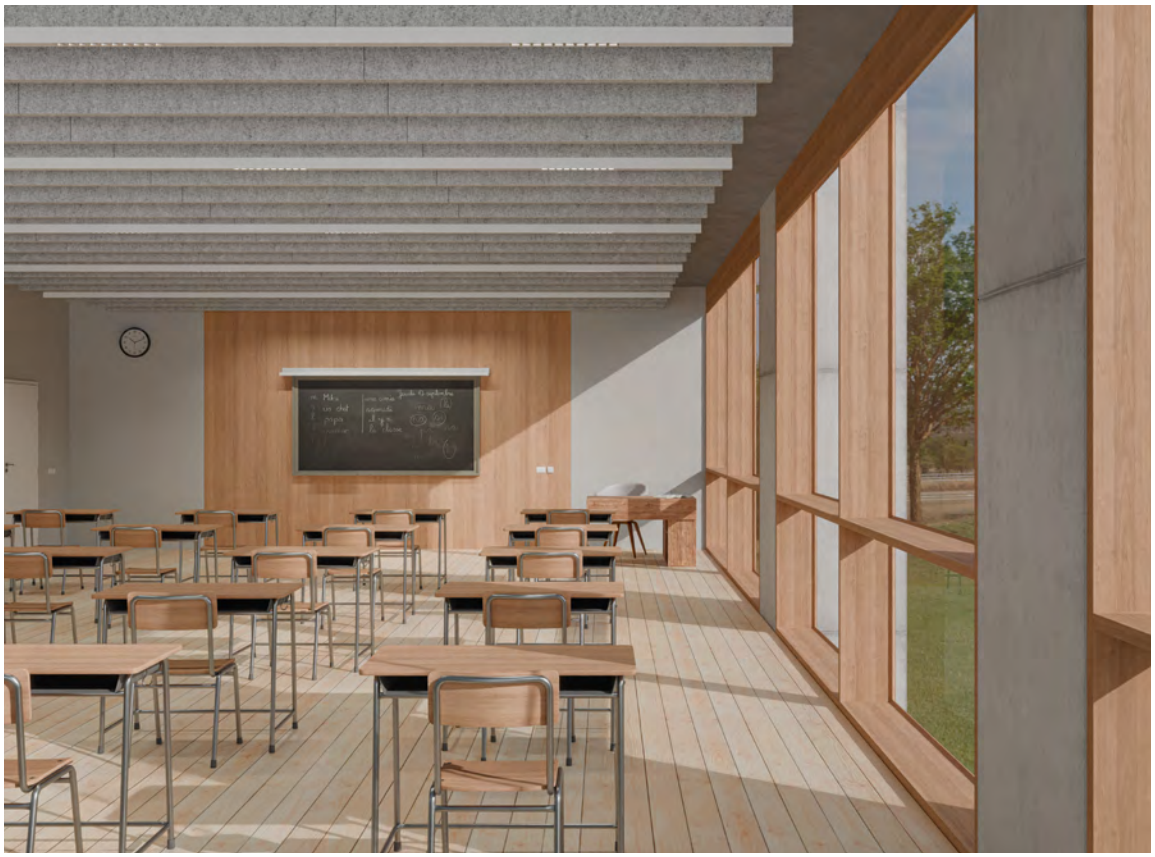





m Mka
n un chat
l papa
maman
une amie
samedi
il y a
la classe
jeudi 13 septembre
ma
ma
si

1.23 > **0.59**
seconds

acoustic planning ➔ p. 166





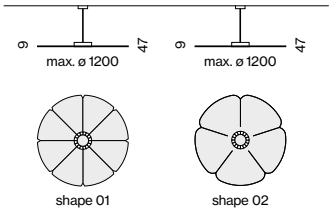
floral

acoustic suspended

Quickinfo

floral shape
v-cuts
flame retardant version available
medium acoustic performance

Types



Customisable options
diameter
size of luminaire
rod or cable suspension
ceiling mounted
create your own shape

Acoustic colours



standard xilence.xal.com/colours

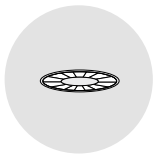
Luminaire colours



Light distribution



direct



based on MITA circle

flat design 9 mm



DIN EN 12464-1 UGR ≤ 19



wide range of colours









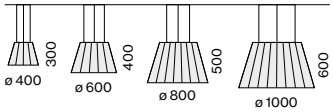
shades

acoustic suspended

Quickinfo

acoustic lampshade
precise cuts
medium acoustic performance
flame retardant version available

Types



Customisable options

diameter
height
angle
double version

Acoustic colours



standard

xilence.xal.com/colours

Light distribution



direct

Combinable with



ARY suspended

SASSO suspended

TASK suspended

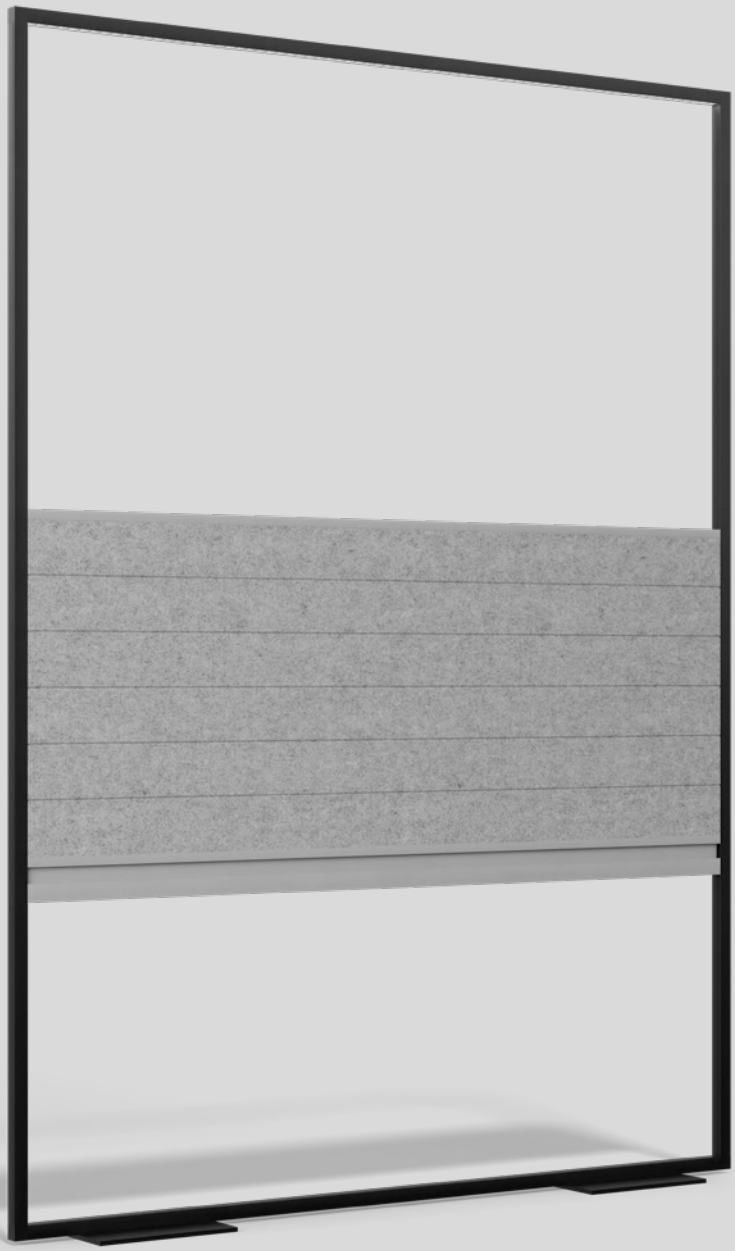


acoustic volume



wide range of colours


UG 01
Library



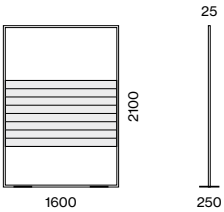
working frame

acoustic standing

Quickinfo

combined desk screen with luminaire
double workstations (UGR ≤ 19)
suitable for height-adjustable tables
acoustic privacy
precise v-cuts
flame retardant version available

Type

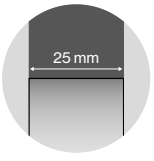


Customisable options
length
custom colour

Colours

Light distribution





flat design
25 mm



DIN EN 12464-1
UGR ≤ 19



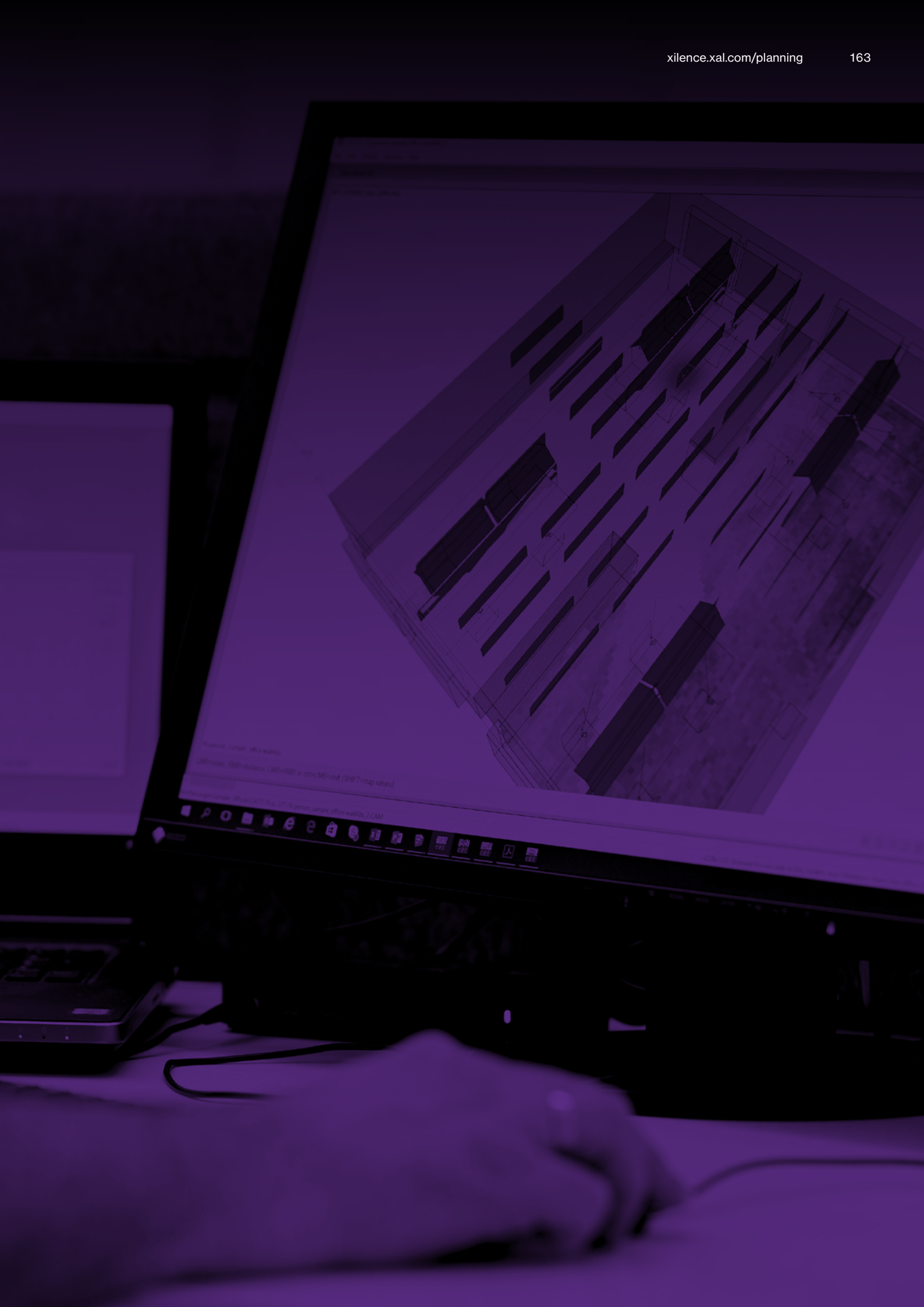
double work-
station divider



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Planning





Planning examples

EN Room acoustics significantly influence our well-being and performance. Since noise and disruptive sounds not only affect our concentration but also act as a source of stress, one of the main challenges in planning is to create a calm and functional acoustic atmosphere that is adapted to the respective activity in the room. That is why we have developed a product portfolio in which lighting and room acoustics harmoniously interact. On the following pages you will find a selection of acoustic calculations for various room types and configurations.

IT L'acustica condiziona fortemente la nostra vita, in termini di benessere e prestazioni. Suoni fastidiosi e rumori disturbanti incidono negativamente sulla concentrazione e costituiscono un vero e proprio fattore di stress. A livello progettuale la creazione di un atmosfera acusticamente tranquilla e adatta allo svolgimento delle attività previste per ogni ambiente rappresenta una sfida importante. Ecco perché abbiamo creato una linea di prodotti nella quale luce e acustica interagiscono in armonia. Nelle pagine a seguire, faremo vedere una selezione di calcoli acustici per diversi tipi di ambienti e layout.

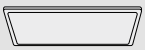
Seminar space

EN During lectures and conferences, a room's acoustics should enable speakers to communicate without effort and ensure that they are easily understood by other participants.

IT In occasione di covegni e conferenze l'acustica della stanza deve permettere ai relatori di parlare senza sforzo e di essere compresi senza difficoltà dai partecipanti.



TASK acoustic
surface



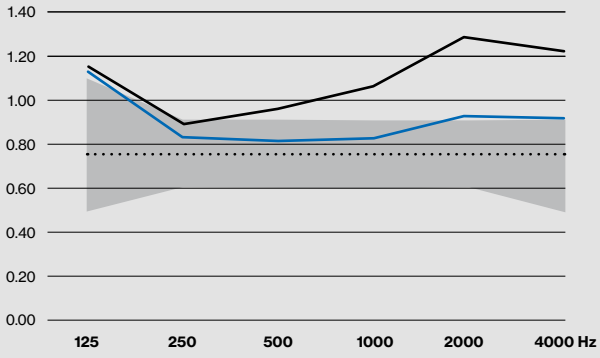
TASK S
surface



Parameters

Calculation basis DIN 18041
Room group A2
Target reverberation time 0.76 s
Surfaces concrete ceiling, concrete floor, reverberant exterior walls, glazing, light curtains, wood-panelled interior walls, upholstered chairs
Products 9 × TASK acoustic square 1200

Reverberation time



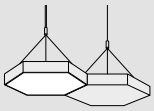
Reverberation time without TASK acoustic
Reverberation time with TASK acoustic
Target reverberation time according to DIN 18041
Tolerance area according to DIN 18041

Kindergarten

EN It is only natural that kindergartens are noisy places. Noise-related stress leads to irritability and can promote aggressive behaviour. This makes it all the more important to create a harmonious atmosphere through targeted acoustic planning. The product portfolio also offers a range of special colours that support vibrant interior design.

IT Le scuole materne sono ambienti rumorosi per definizione. Lo stress rumore correlato può provocare irritabilità e comportamenti aggressivi, motivo per cui è importante creare un'atmosfera acusticamente tranquilla mediante la progettazione mirata dell'intervento. I nostri prodotti sono disponibili in una vasta gamma di colori, contribuendo alla creazione di interni dalle tinte vivaci.

HEX-O
suspended

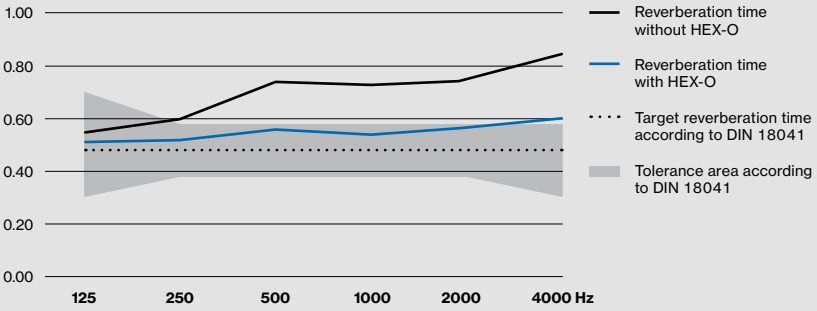




Parameters

Calculation basis DIN 18041
Room group A3
Target reverberation time 0.49 s
Surfaces wooden ceiling, parquet floor, wood-panelled walls, glazing, carpet, upholstery
Products 5 × HEX-O MODULE 1000, 5 × HEX-O MODULE 750, 2 × HEX-O MODULE 500

Reverberation time

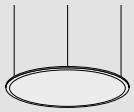


Meeting room

EN Effective mutual understanding is the key to a successful meeting. The aim is to achieve even sound absorption in the frequency range relevant to speech. In small meeting rooms, acoustic elements close to the sound source, directly above the conference table, have proven effective.

IT La mutua comprensione tra le persone è fondamentale per la riuscita di una riunione. L'obiettivo è assorbire perfino l'intervallo delle frequenze sonore rilevanti per il parlato conversazionale. Nelle sale piccole si sono rivelati efficaci gli elementi acustici posizionati in prossimità della sorgente sonora, ovvero sopra il tavolo.

TASK acoustic
suspended



TASK
suspended

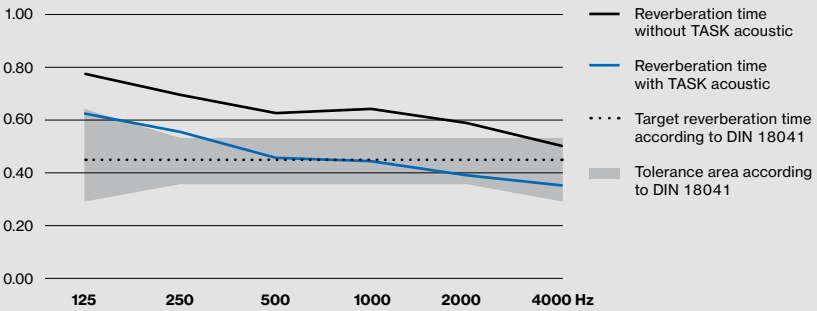




Parameters

Calculation basis DIN 18041
Room group A3
Target reverberation time 0.44 s
Surfaces wooden ceiling, stone floor, wood-panelled walls, glazing, lightly upholstered chairs
Products 3 × TASK acoustic round 1200 susp., 4 × TASK acoustic round 900 susp., 2 × TASK acoustic round 600 suspended

Reverberation time

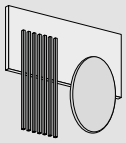


Canteen

EN In canteens, a constant background noise is created by conversations, clattering tableware, or chairs being moved. To nonetheless facilitate a pleasant environment for conversation, it is important to significantly reduce reverberation. The even distribution of absorbing acoustic elements on the ceiling and walls supports a balanced acoustic environment.

IT Nelle mense il costante rumore di fondo è costituito dalle conversazioni, dall'acciottolio delle stoviglie e dalle sedie che si spostano. Per far sì che l'ambiente favorisca l'intelligibilità del parlato è fondamentale ridurre la riverberazione. La distribuzione uniforme dei pannelli acustici lungo i muri e il controsoffitto garantisce un ambiente acusticamente bilanciato.

FELT 9
lamella

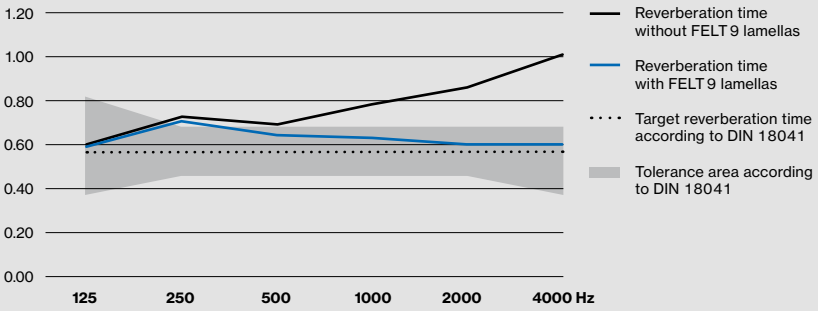




Parameters

Calculation basis DIN 18041
Room group A3
Target reverberation time 0.57 s
Surfaces gypsum board ceiling, gypsum board wall, stone floor, glazing, lightly upholstered chairs, bench with cushions
Products 25 m² FELT 9, lamellas

Reverberation time

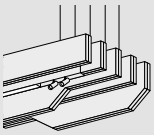


Classroom

EN The most important thing in a classroom for both teachers and students is intelligibility of speech. Particularly in larger classrooms, it is essential to reduce reverberation time to achieve good speech intelligibility throughout the room. Ideal room acoustics improve both speech and reading comprehension as well as memory performance.

IT Fondamentale è l'intelligibilità del parlato, sia per gli studenti che per gli insegnanti; ragion per cui nelle aule di dimensioni maggiori è necessario ridurre il tempo di riverberazione. Un'acustica ottimale migliora la comprensione scritta e orale nonché la memoria.

baffle 50 system

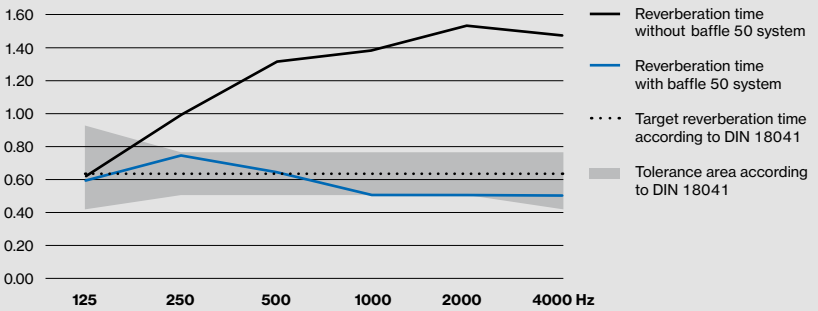




Parameters

Calculation basis DIN 18041
Room group A3
Target reverberation time 0.64 s
Surfaces gypsum board ceiling, parquet floor, reverberant walls, partly wood panelling, glazing
Products baffle 50 system, height 28 cm, distance 50 cm

Reverberation time



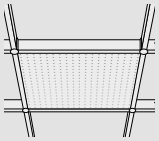
Open-plan office

EN Planning the acoustics of open-plan offices is particularly challenging. While conversations require good speech intelligibility, the rest of the team should be able to focus on their work, which is impeded by too high speech intelligibility. This means that too much sound can also be absorbed. VDI 2569 therefore specifies both an upper and a lower limit for the reverberation time.

IT La progettazione acustica degli uffici open space è particolarmente impegnativa. Le conversazioni richiedono una buona intelligibilità del parlato, ma il resto dei collaboratori deve potersi concentrare sul proprio lavoro, cosa che diventa difficile se l'intelligibilità del parlato è troppo alta. Ciò significa che il suono può essere assorbito in modo eccessivo. Per questo la norma VDI 2569 specifica per il tempo di riverbero un limite inferiore oltre che superiore.



MOVE IT 45
square grid inlay
suspended

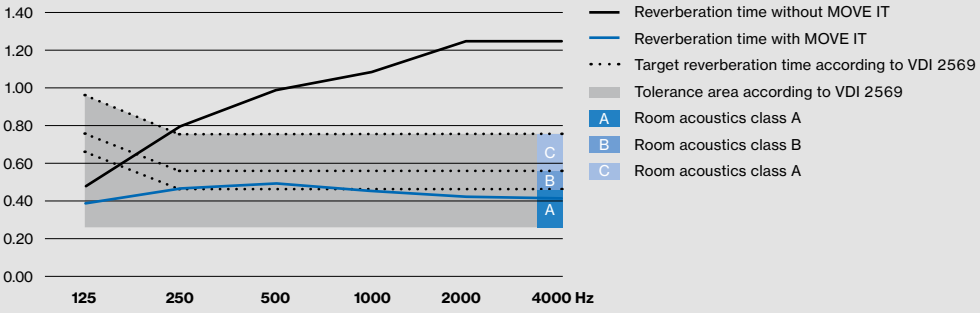


Parameters

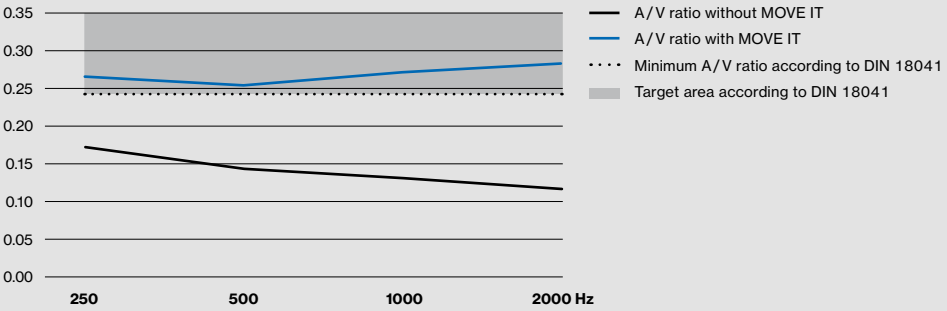
Calculation basis DIN 18041, VDI 2569
Room group B4
Minimum A/V ratio 0.25
Target reverberation time 0.4 – 0.9 s

Surfaces gypsum board ceiling, gypsum board walls, parquet floor, reverberant exterior walls with glazing, cupboards, open shelving, lightly upholstered chairs
Products 24 × MOVE IT acoustic square grid

Reverberation time

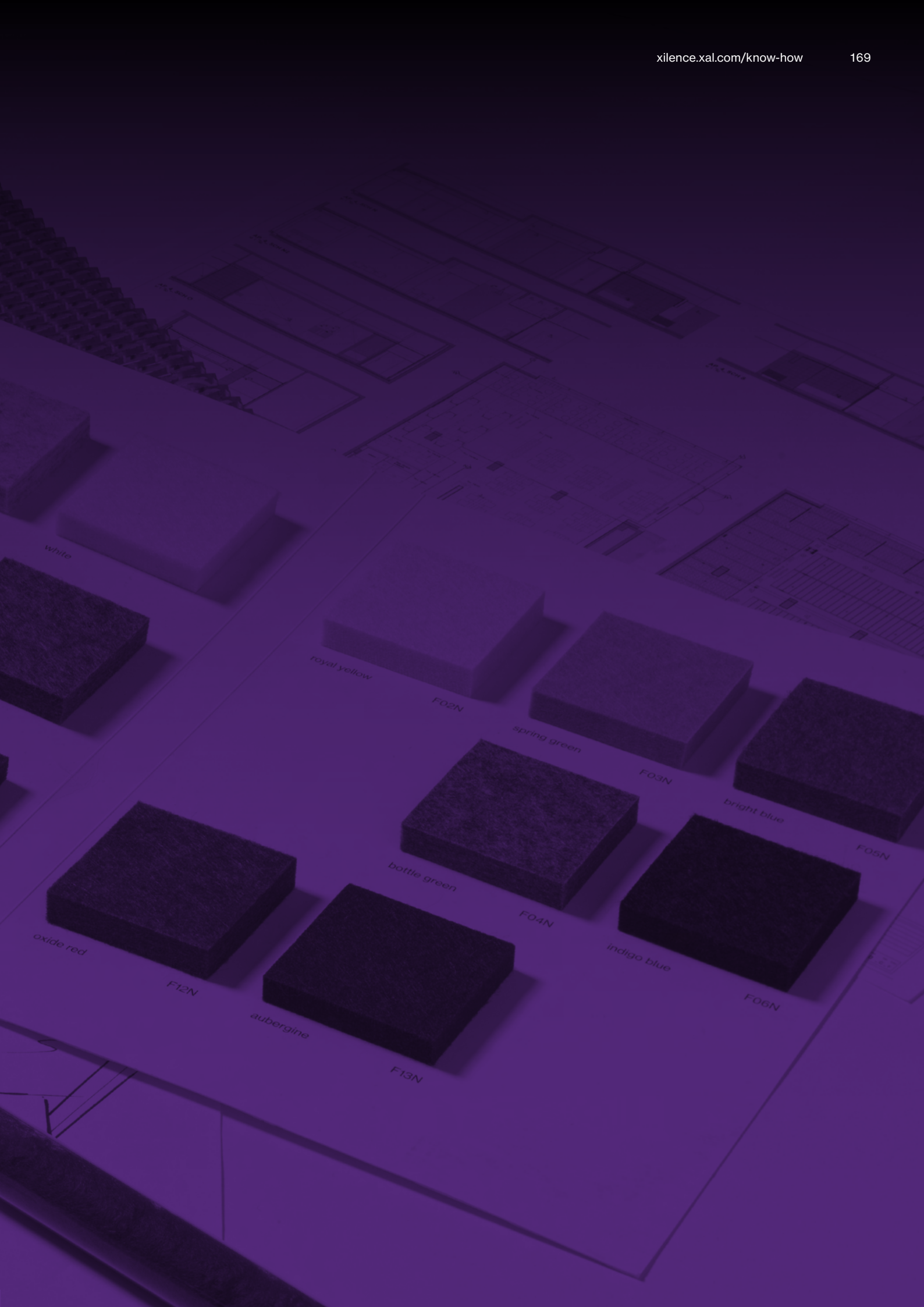


A/V ratio



Know-how


Acoustic colours
black
marble grey
anthracite
F09N
felt grey
limestone
F14N
autumn red
F11N
HIDDEN CABLE
TRACE
FELT BAFFLE


white
royal yellow
F02N
spring green
F03N
bright blue
F06N
bottle green
F04N
indigo blue
F06N
oxide red
F12N
aubergine
F13N

Noise makes you ill

When exposed to noise, our body releases stress hormones that make us ill in the long term.

EN Noise is a stress factor. This is due to evolution: acoustic (warning) signals trigger fight or flight reactions. The increased release of the stress hormones adrenaline and noradrenaline raises the heart rate and blood pressure, which narrows the focus and supplies the muscles with sufficient oxygen. The body compensates for this loss of energy by producing more cortisol, which increases blood-fat and blood-sugar levels. It is precisely these physical processes that serve us in the short term but make us ill in the long term.

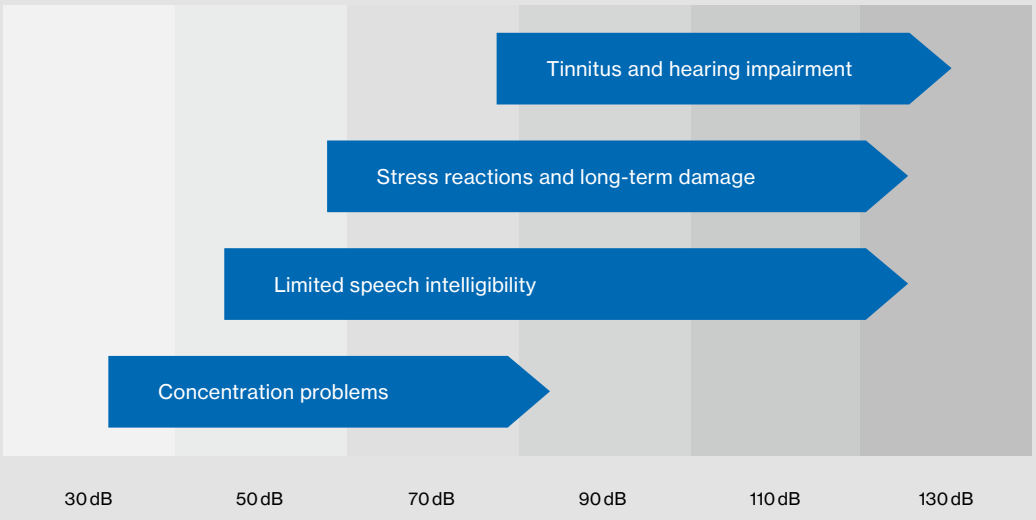
Unfortunately, the origin of the noise is irrelevant: Even if loud noises today rarely mean a threat to life, our bodies still react in the same way. By significantly reducing physical stress symptoms, quiet, balanced room acoustics have a positive long-term effect on health.

Il rumore fa ammalare

Gli ormoni rilasciati in risposta allo stress causano nel tempo danni alla salute.

IT Il rumore è un fattore di stress. La ragione è evolutiva: i segnali acustici (di pericolo) innescano nel corpo reazioni di lotta o fuga. L'incremento degli ormoni dello stress, adrenalina e noradrenalina, aumenta la frequenza cardiaca e la pressione sanguigna. Di conseguenza, l'attenzione cala e il livello di ossigeno nei muscoli diminuisce. Per compensare questa perdita di energia il corpo produce più cortisolo che a sua volta aumenta i livelli di grasso e di zucchero nel sangue. Sono processi fisici indispensabili ma che nel lungo periodo fanno ammalare.

Non importa la loro origine: anche se raramente i rumori forti rappresentano un pericolo di vita, il nostro corpo reagisce sempre nello stesso modo. Un ambiente acusticamente sereno riduce i sintomi dello stress fisico e incide positive sulla salute nel lungo periodo.





Noise is distracting

Even a whisper is enough to interrupt concentration.

EN A whisper is only 30 dB – but it still affects our mental state and our cognitive performance.

After even the slightest distraction at work, it takes an average of 25 minutes to return to our original task and another eight minutes to reach our original level of concentration.[1)]

Researchers have a term for this consequential cycle of interruption and the laborious process of restoring performance level: the Sawtooth Effect. Good room acoustics increase concentration by minimising distractions caused by noise.

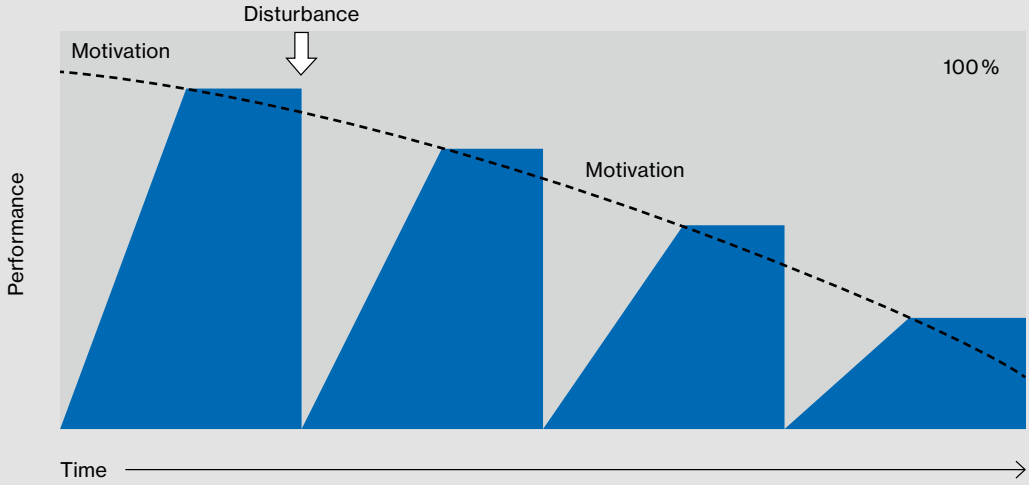
Il rumore distrae

Per interrompere la concentrazione basta anche un bisbiglio.

IT Il volume di un sussurro è di soli 30 dB eppure è in grado di influenzare sia il nostro stato mentale che il nostro rendimento cognitivo.

Anche dopo una minima distrazione sul lavoro, ci vogliono in media 25 minuti per tornare al nostro compito iniziale e altri otto minuti per raggiungere il livello di concentrazione di prima.[1)]

I ricercatori hanno inventato un termine per questo grave crollo con laborioso recupero del livello di performance: effetto dente di sega. Una buona acustica migliora la concentrazione mantenendo al minimo le distrazioni causate dal rumore.



Sources
[1)] Gonzalez, Victor M.: “No Task Left Behind? Examining the Nature of Fragmented Work”, 2005



Noise isolates

The louder the environment, the more reduced personal communication.

EN In large, open-plan offices, the only way to satisfy the need for privacy is often to withdraw and isolate oneself, for example by wearing headphones. In addition, personal contacts in open spaces are often reduced, as confidential conversations in private are difficult. In comparison to small offices, face-to-face communication in open-plan offices is reduced by around 70 per cent[2], with employees resorting to e-mails and instant messaging.

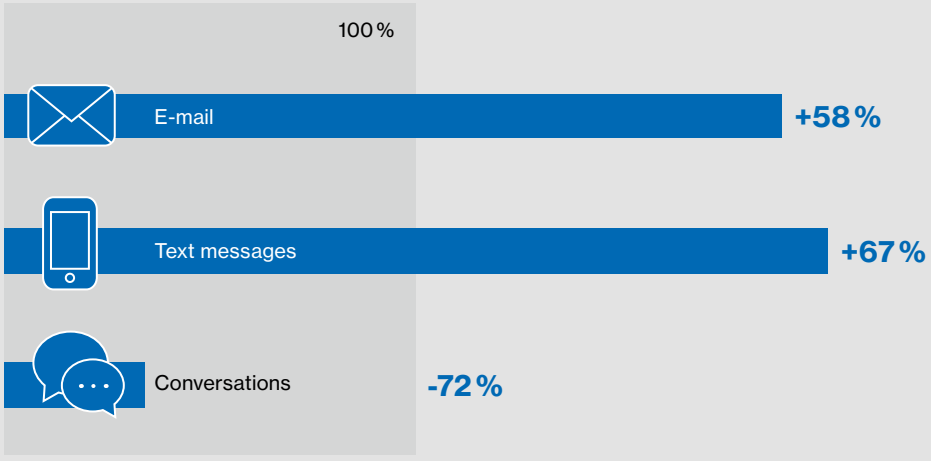
Balanced room acoustics limit the spread of sound, creating sufficient intimacy to allow personal conversations to take place in offices occupied by several people. Acoustic planning is therefore essential for a productive and social work environment in which people feel connected and maintain communication.

Il rumore isola

Più è rumoroso l'ambiente e minore sarà la comunicazione fra le persone.

IT Spesso nei grandi uffici open space l'unico modo per garantirsi un po' di privacy è isolarsi, ad es. attraverso l'uso di cuffie. Inoltre, la comunicazione fra le persone si riduce in quanto risulta difficile tenere conversazioni riservate. Rispetto agli uffici di piccole dimensioni, nei grandi open space le comunicazioni faccia a faccia diminuiscono del 70 %.[2] In tali spazi, i collaboratori prediligono la posta elettronica e la messaggistica istantanea.

Un'acustica bilanciata restringe la diffusione del suono, creando le condizioni ambientali ottimali per le conversazioni negli uffici in cui sono presenti molte persone. La progettazione acustica diventa quindi essenziale per un ambiente di lavoro produttivo e nel quale le persone possano socializzare, interagire e comunicare.



Sources
[2] Bernstein, Ethan S. & Turban, Stephen: "The Impact of the 'Open' Workspace on Human Collaboration", 2018



Noise costs money

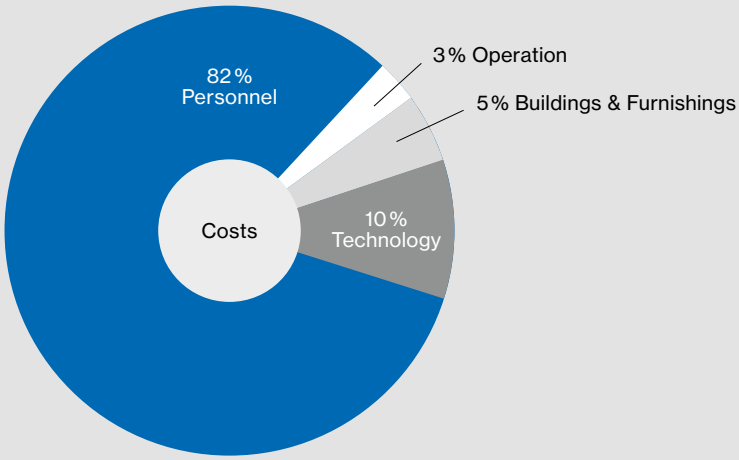
We should not allow poor room acoustics to impair performance.

EN In our knowledge society, personnel costs have become the biggest cost factor. Employees create added value through focused work and their cognitive performance. Good room acoustics improve the ability to concentrate, while distractions and stress are reduced. Performance – measured in terms of error rate and short-term memory – increases by up to 10 per cent.[3)]

Il rumore costa denaro

Una cattiva acustica compromette le prestazioni.

IT Nella società del sapere, le spese per il personale sono tra i maggiori fattori di costo per le aziende. I collaboratori creano valore aggiunto in virtù delle loro prestazioni cognitive e del loro attento lavoro. Una buona acustica ambientale migliora la capacità di concentrazione e riduce lo stress e il disturbo provocati dal rumore. Le prestazioni in materia di probabilità di errore e di memoria a breve termine possono aumentare del 10 %.[3)]



Sources
[3)] Sykes, David M.: “Productivity: How Acoustics Affect Workers’ Performance In Offices & Open Areas”, 2004

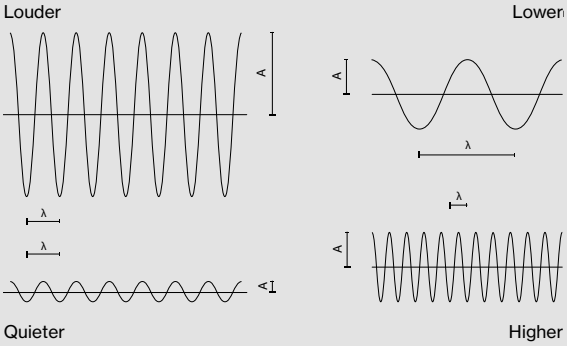
Sound

EN Sound is generally defined as a vibration that propagates as a sound wave within an elastic medium. In air, sound causes pressure and density fluctuations. These fluctuations move in waves and spread spherically around the sound source.

Narrow, fast sound waves have a high frequency (e.g. beeping sounds), while wide, slow waves have a low frequency (e.g. humming sounds). The higher the amplitude A, the louder the tone (sound pressure level).

IT Il suono è definito come la vibrazione di un mezzo elastico che si propaga per onde sonore. Nell'aria, provoca oscillazioni di pressione e densità, le quali si spostano a onde e si diffondono in onde sferiche intorno alla sorgente sonora.

Le onde sonore strette e veloci hanno una frequenza alta (ad es. i suoni intermittenti), mentre quelle larghe e lente hanno una frequenza bassa (ad es. i ronzii). Più alta è l'amplitudine A, più forte sarà il suono (livello di pressione sonora).



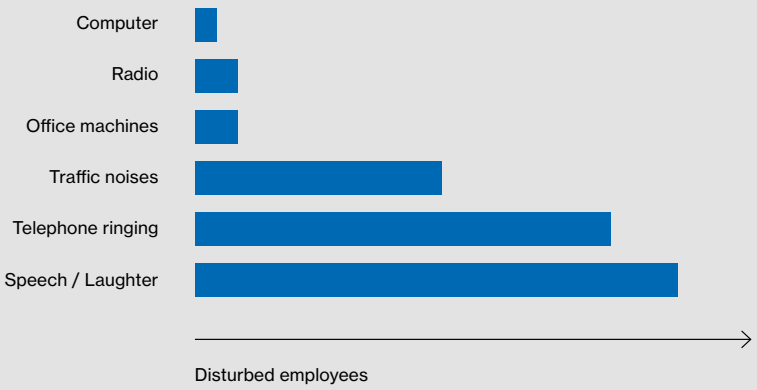
Noise

EN Noise is the biggest source of stress in modern office environments. However, since the perception of noise is highly subjective, it is not possible to measure noise as a stress factor. This makes it all the more important to consider both the volume and also the quality of the noise when designing ideal room acoustics at the workplace. For example, conversations are perceived as significantly more irritating than monotonous traffic noise at the same volume.

The irrelevant sound effect describes the negative influence of speech interference on our performance – regardless of whether we understand the language. If the brain isolates individual voices from a babble of voices to follow a conversation, a so-called cocktail party effect occurs. Due to these two phenomena, conversations in office situations are the greatest source of distraction and are a central challenge in acoustic planning.

IT Il rumore è la più grande fonte di stress negli uffici moderni. Essendo soggettiva la percezione dei suoni che lo compongono, non può essere misurato né quantificato in maniera assoluta. Perciò nella progettazione di un ambiente lavorativo ottimale in termini acustici vanno considerati sia la quantità che la qualità del rumore. Per esempio, le conversazioni sono ritenute molto più irritanti rispetto al rumore monotono del traffico, a parità di volume.

Negli uffici le conversazioni sono la maggior fonte di distrazioni e rappresentano una vera e propria sfida per la progettazione acustica. Sono 2 i fenomeni che si verificano: il primo è il cosiddetto Irrelevant Sound Effect (ISE) che descrive l'influenza negativa del rumore di sottofondo sulla nostra attenzione. Il secondo è l'effetto cocktail party, quando il cervello isola le singole voci in mezzo a una babele di persone al fine di seguire una conversazione.



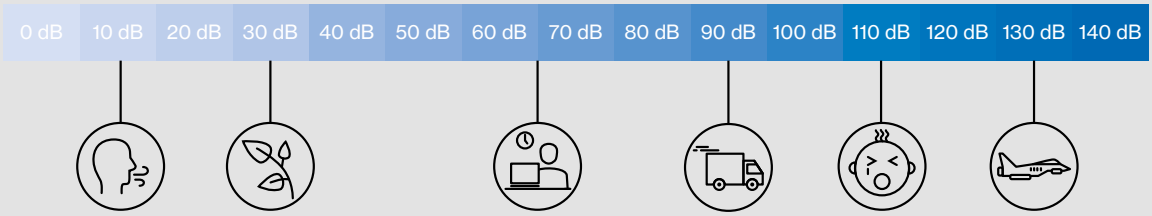
Sound pressure level (volume)

EN The sound pressure level indicates the volume of a sound and is measured in decibels (dB). The human hearing range is between 0 dB (hearing threshold) and 130 dB (pain threshold).

A level of 10 dB corresponds to a normal breathing sound, while the rustling of leaves has a volume of around 30 dB. In a large open-plan office, the background noise level can easily reach 70 to 75 dB. Hearing protection is required by law if the noise level at the workplace exceeds 85 dB. The human pain threshold is around 130 dB, which is roughly equivalent to the noise level of a jet taking off nearby.

IT Il livello di pressione sonora indica il volume del suono e si esprime in decibel (dB). L'udito umano percepisce da 0 dB (soglia dell'udito) a 130 dB (soglia del dolore).

Il livello di 10 dB corrisponde al rumore di un respiro normale mentre il fruscio delle foglie può avere un volume di 30 dB. In un grande ufficio open space il rumore di fondo può facilmente raggiungere i 70–75 dB. Per legge, qualora il livello risulti pari o sopra gli 85 db è obbligatorio l'utilizzo di DPI per la protezione dell'udito. La soglia del dolore è di 130 dB, che corrisponde al suono emesso da un jet in fase di decollo.



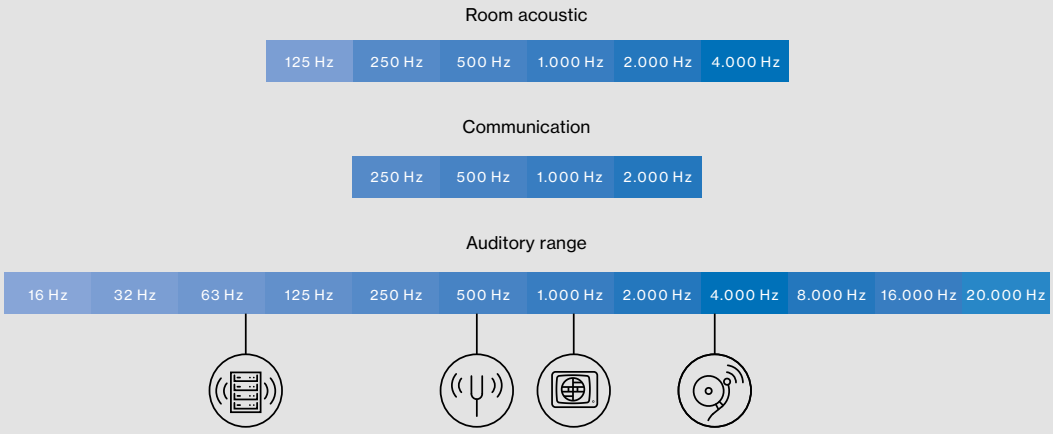
Frequencies (pitch)

EN The frequency, measured in Hertz (Hz), indicates the pitch. The human hearing range is between about 20 Hz and 20,000 Hz. Frequencies below this range are referred to as infrasound (e.g. the hearing range of elephants), while frequencies above this range are referred to as ultrasound (e.g. the hearing range of bats).

The frequencies relevant for communication range from approx. 200 Hz to 2,000 Hz. In room acoustics, we typically consider frequencies from 125 Hz to 4,000 Hz in order to create ideal sound conditions. High frequencies are perceived particularly intensely by the human ear: Hearing is most sensitive in the range around 4,000 Hz.

IT La frequenza, espressa in Hertz, acutezza di un suono (pitch). L'udito umano è sensibile al range compreso tra 20 e 20.000 Hz. Le onde al di sotto dei 20 Hz sono gli infrasuoni (ad es. i suoni udibili dagli elefanti) mentre quelle al di sopra dei 20.000 Hz sono gli ultrasuoni (ad es. i suoni udibili dai pipistrelli).

La comunicazione si verifica nel range compreso tra 200 e 20.000 Hz. Secondo l'acustica di interni l'intervallo tra 125 e 4.000 Hz definisce le condizioni ottimali degli ambienti. Le alte frequenze nell'intervallo intorno ai 4.000 Hz sono percepite come particolarmente intense dall'orecchio umano.



Certified acoustics

EN For each product family, we have comprehensive acoustic measurements carried out in a specially certified laboratory. We measure our products in a standardised set-up to ensure comparability. In addition, we carry out various realistic measurements (as individual or group installations, suspended or directly mounted). This means that we have certified acoustic values for every situation

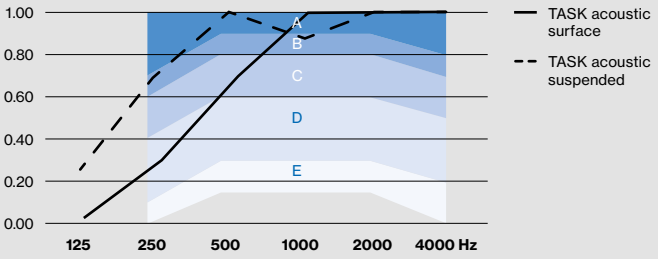
IT Per ogni linea di prodotti conduciamo misurazioni acustiche presso un laboratorio certificato appositamente a questo scopo. Ci adoperiamo affinché le condizioni siano le più realistiche possibili, in modo da garantire migliori prestazioni.

Optimised sound absorption

EN The absorption of sound significantly influences the noise level in a room. The degree of absorption indicates how much sound individual materials and objects reflect or absorb. Sound absorption directly influences the reverberation time in a room, which has a positive effect on the noise level. The harder and smoother a material, the lower its absorption. The value ranges from 0 – complete reflection – to 1 – complete absorption and usually differs according to frequency. In room acoustics, we pay particular attention to the frequency range from 125 Hz to 4000 Hz. Based on this, we then calculate the reverberation time and design the ideal spatial acoustics solution.

IT L'assorbimento acustico incide notevolmente sul livello di rumorosità di un ambiente. Il grado di assorbimento indica la quantità di suono che un materiale è capace di trattenere. L'assorbimento del suono influisce sui tempi di riverberazione in una stanza e migliora il livello di rumorosità. Più il materiale è duro e liscio, minore sarà la capacità di assorbimento. Il range va da 0 a 1, ovvero dalla completa riflessione al completo assorbimento. L'acustica di interni rivolge particolare attenzione alle frequenze comprese tra 125 e 4.000 Hz. Ecco la base dalla quale viene calcolato il tempo di riverberazione e progettata la soluzione acustica ottimale.

Sound absorption coefficient (α_p)



Alpha W and sound absorption classes

EN The Alpha W (weighted sound absorption coefficient) is an average value of sound absorption that is particularly commonly used in German-speaking countries. When calculating the Alpha W, the uniformity of absorption across all frequency ranges is also considered.

Based on their Alpha W, materials or objects are divided into classes A to E, with A indicating the highest degree of absorption. The absorption class is only used for a rough classification of absorbent materials or products. Since the distribution of absorption over all frequency ranges is crucial in spatial acoustics planning, these must be considered in the calculation.

IT Il coefficiente di assorbimento acustico Alfa W è il valore medio che indica la proprietà di fonoassorbimento ed è particolarmente utilizzato nei paesi germanofoni. Nel calcolo viene considerata l'uniformità dell'assorbimento in tutte le gamme di frequenza.

A seconda del coefficiente Alpha W i materiali vengono suddivisi in classi che vanno dalla A alla E, ovvero dal più alto al più basso grado di assorbimento. L'obiettivo è raggruppare in modo approssimativo i materiali o prodotti fonoassorbenti. Fondamentale tenerne conto in sede di calcolo, in quanto la distribuzione dell'assorbimento su tutte le gamme di frequenza è decisiva per la progettazione acustica di un ambiente.

A	B	C	D	E
α_w 0.90				

NRC and SAA

EN These two parameters are used to roughly assess the effectiveness of acoustic products. The NRC (Noise Reduction Coefficient), which is mainly used in English-speaking countries, is the average sound absorption coefficient in the range between 250 Hz and 2000 Hz. The SAA (Sound Absorption Average) averages the absorption coefficients in the range from 200 Hz to 2500 Hz. More values are included and the results are less rounded than with the NRC. In the long term, it is expected that the SAA will replace the NRC.

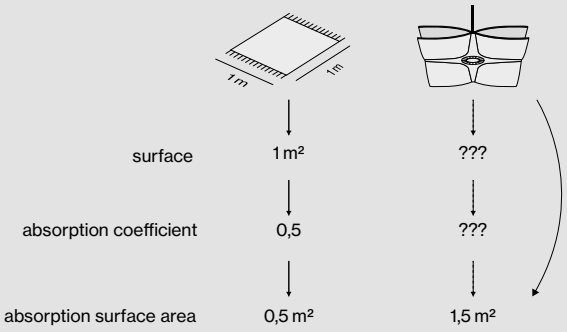
IT Sono i 2 parametri utilizzati per valutare a grandi linee l'efficacia dei prodotti acustici. Il coefficiente di riduzione del rumore (NRC), ampiamente utilizzato nei pasi anglofoni, è il valore medio di assorbimento acustico compreso nell'intervallo tra 250 e 2.000 Hz. Invece la media di assorbimento acustico (SAA) si trova tra 200 e 2.500 Hz: si tiene conto anche di altri valori e i risultati sono meno approssimati rispetto all'NRC. Nel lungo periodo, è probabile che sostituisca l'NRC.

0.85	0.88
NRC	SAA

Absorption area

EN The equivalent absorption area plays an important role in calculating the reverberation time in enclosed spaces. The larger the area for an assumed 100 per cent sound absorption, the shorter the reverberation time. This absorption area is calculated by multiplying the absorption coefficient by the surface area of the object. For example, 1 m² of carpet with an average absorption coefficient of 0.5 has an average absorption area of 0.5 m². For complex three-dimensional objects, calculating the absorption area can prove difficult, so the specified absorption area is multiplied by the number of products used.

IT L'area equivalente di assorbimento acustico è di fondamentale importanza nel calcolo del tempo di riverberazione negli ambienti chiusi. Più ampia è la superficie per il fonoassorbimento teorico del 100 %, minore sarà il tempo di riverberazione. Tale area è calcolata moltiplicando il coefficiente di assorbimento per la superficie della stanza. Ad es., 1 m² di moquette avrà un coefficiente medio di assorbimento pari a 0,5 e un'area di assorbimento di 0,5 m². Nel caso di oggetti tridimensionali complessi, il calcolo della superficie di assorbimento può rivelarsi difficile; quindi, l'area di assorbimento in questione va moltiplicata per il numero di prodotti utilizzati.



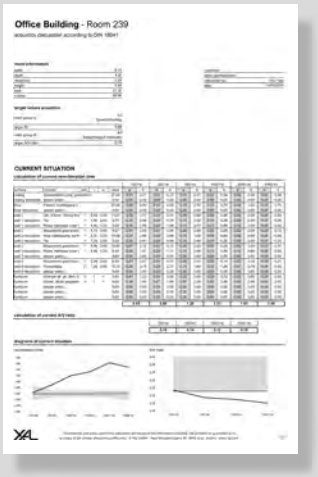
Equivalent sound absorption area (A_{eq})

TYPE	125	250	500	1000	2000	4000 Hz
MINO CIRCLE 1000 ceiling	0.10	0.27	0.70	1.17	1.07	1.00
MINO CIRCLE 1500 ceiling	0.30	0.60	1.43	2.30	2.17	2.10
MINO CIRCLE 1000 suspended/inlay	0.50	0.50	0.87	1.30	1.43	1.57
MINO CIRCLE 1500 suspended/inlay	0.97	1.20	1.83	2.67	3.07	3.30

Individual calculations

EN The basis for any acoustic planning is an acoustic survey. For new buildings, we calculate the reverberation time based on the surfaces and materials used. For existing buildings, we also use our specially designed acoustic measurement bag. Based on this data, we will propose a customised and precise retrofit to create the ideal acoustic environment. Our acoustic calculations are conducted in accordance with DIN 18041, and for office spaces also in accordance with VDI 2569. Depending on the use of the room, we calculate the reverberation time and/or the A/V ratio for you.

IT La base per un progetto acustico è il rilievo fonometrico. Per gli edifici di nuova costruzione il tempo di riverberazione dipenderà dalle superficie e dai materiali che si vogliono utilizzare. Invece per i fabbricati esistenti effettueremo le necessarie misurazioni con gli strumenti contenuti nella valigia che abbiamo creato appositamente per questa finalità. I dati rilevati ci permetteranno di predisporre il retrofit personalizzato e di definire le condizioni acustiche ottimali. I calcoli verranno eseguiti in conformità alla norma DIN 18041 e nel caso di uffici anche alla VDI 2569. Calcoleremo il tempo di riverberazione e/o il rapporto A/V in funzione della destinazione d'uso degli ambienti.


Office Building - Room 239

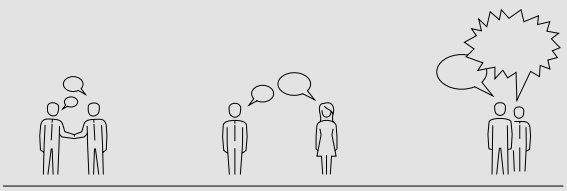
CURRENT SITUATION

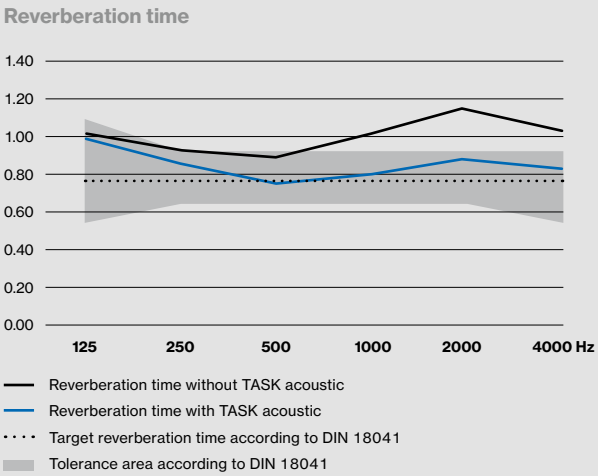


Reverberation time

EN Reverberation time is one of the most important factors in evaluating room acoustics: It indicates the decay behaviour of sounds in a room. In a church, for example, the reverberation time is very long, lasting several seconds, whereas in a recording studio it is particularly short, at around 0.3 seconds. A reverberation time that is too long results in a reduction in speech intelligibility. As a result, people speak louder, which in turn leads to a higher sound level. This is known as the Lombard effect.

IT Il tempo di riverberazione è uno dei fattori decisivi nella valutazione acustica di un ambiente e sta a indicare il tempo di decadimento del suono. Nelle chiese ad es. i tempi di riverberazione sono molto lunghi e possono arrivare a diversi secondi, mentre negli studi di registrazione sono brevissimi, di circa 0,3 secondi. Tempi molto lunghi indicano una riduzione dell'intelligibilità del parlato. Di conseguenza, si tenderà ad aumentare involontariamente l'intensità della voce. Questo fenomeno è noto come effetto Lombard.

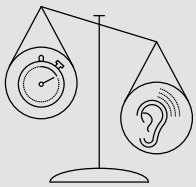

Lombard effect



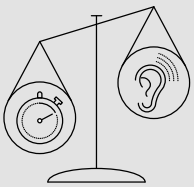
Speech intelligibility

EN The reverberation time has a direct influence on speech intelligibility. The lower the reverberation, the better the intelligibility of spoken words. While good speech intelligibility is certainly desirable in conference rooms, it can be a distraction in offices. This is because the high level of intelligibility of other people's conversations often interrupts concentration and increases the likelihood of errors.

IT Il tempo di riverberazione incide direttamente sull'intelligibilità del parlato. Più breve è la durata della riverberazione, più comprensibili saranno le parole pronunciate. Auspicata nelle sale conferenze, potrebbe invece distrarre i lavoratori degli uffici in quanto la comprensibilità delle conversazioni spesso sono di disturbo per la concentrazione e aumentano la probabilità di commettere errori.



high reverberation time
low speech intelligibility



low reverberation time
high speech intelligibility

A/V ratio

EN In addition to the reverberation time, the reverberance in a room can also be defined by the A/V ratio. It indicates the relation between the existing sound absorption surface and the spatial volume. Depending on the room utilisation, DIN 18041 or VDI 2569 provide recommendations for the reverberation time or the A/V ratio.

IT Il riverbero di una stanza può essere calcolato anche tramite il rapporto A/V che esprime la proporzione tra superficie di assorbimento acustico e volume dell'ambiente. Le indicazioni contenute nelle norme DIN 18041 e VDI 2569 in materia di tempo di riverberazione e rapporto A/V dipendono dalla destinazione d'uso.

DIN 18041 / ÖNORM B 8115-3

EN DIN 18041 differentiates between two groups of rooms: A (medium and long distances) and B (short distances). Group A includes, inter alia, community halls, classrooms, and sports halls. These are further categorised according to the types of use A1 to A5. Depending on the use and volume of the room, the DIN standard provides recommendations for the target reverberation time. For office spaces, canteens, or transit areas, room group B applies. Depending on the acoustic requirements, there is also a classification into the types of use from B1 to B5. The DIN standard provides a recommendation for the minimum A/V ratio, depending on the room height and type of use. The Austrian standard ÖNORM B 8115-3, part 3: Room acoustics, is based on DIN 18041.

IT La norma DIN 18041 suddivide gli ambienti in 2 gruppi: (A) distanze medio-lunghe e (B) distanze brevi. Il gruppo A comprende sale comunali, aule scolastiche o palestre, ed è ulteriormente categorizzato da A1 e A5 a seconda della destinazione d'uso. La norma regola i tempi di riverberazione in base al volume e all'uso a cui è adibito l'ambiente. Il gruppo B comprende uffici, mense e zone di passaggio ed è ulteriormente categorizzato da B1 e B5 a seconda della destinazione d'uso. Le norme DIN stabiliscono il valore minimo per il rapporto A/V, in funzione dell'altezza della stanza e dell'uso a cui è adibita. La norma austriaca "ÖNORM B 8115-3, parte 3: acustica di interni" si basa sulla DIN 18041.

VDI 2569

EN VDI 2569 provides recommendations specifically for the acoustic design of office spaces. For large office spaces, the A/V ratio recommended in DIN 18041 is not the only parameter to be considered: The reverberation time is of primary importance. Depending on the length of the reverberation time, office spaces are assigned to room acoustics classes A (short reverberation time) to C (longer reverberation time).

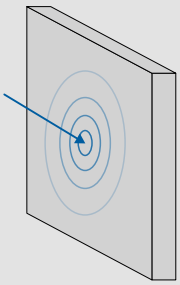
IT La normativa VDI 2569 regola il progetto acustico degli uffici. Per gli spazi di grandi dimensioni vanno considerati sia il rapporto A/V che il tempo di riverberazione, nonché ulteriori parametri. Le classi acustiche vanno da A (tempi brevi di riverberazione) a C (tempi lunghi di riverberazione).

Room acoustics measures

Absorb

EN Absorption is the process by which sound waves are absorbed by a material, with their energy being converted into heat through friction. The absorption coefficient ranges from 0 to 1 and indicates how well a material absorbs sound. An absorption coefficient of 1 corresponds to complete absorption. Typically, acoustic products and materials have different absorption properties depending on the frequency range. To assess the overall absorption coefficient, the values should therefore be considered for the frequency ranges from 125 Hz to 4000 Hz.

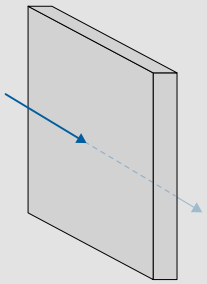
IT Il fonoassorbimento è il processo attraverso il quale le onde sonore vengono assorbite da un materiale e l'energia che ne deriva viene convertita in calore grazie all'attrito. Il coefficiente varia da 0 a 1 e indica la capacità che il materiale ha di assorbire il suono. Il valore 1 corrisponde al completo assorbimento. In genere, materiali e prodotti acustici presentano proprietà di assorbimento diverse a seconda della frequenza. Per valutare il coefficiente di assorbimento complessivo i valori andrebbero considerati per l'intervallo tra 125 e 4.000 Hz.



Block

EN Acoustic screens are used to reduce the spread of sound in a room. Potentially distracting conversations are prevented from being carried through the entire room. Vertical screens also provide privacy and a sense of confidentiality. For such screens to be effective, they must be of a certain height, and their effectiveness can be further increased by using special absorbent screens.

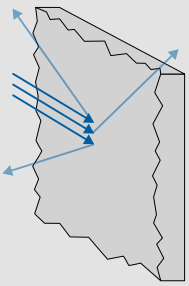
IT I pannelli acustici riducono la diffusione del suono in un ambiente, come ad es. le conversazioni che potrebbero potenzialmente distrarre. Inoltre i pannelli verticali offrono un senso di privacy e riservatezza. La loro efficacia dipende dall'altezza in cui vengono posizionati e può essere incrementata con l'utilizzo di speciali schermature fonoassorbenti.



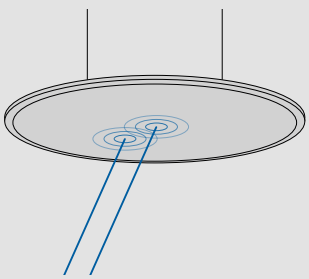
Scatter

EN Sound waves that hit a hard and smooth surfaces are reflected back into the room. Uneven surfaces or three-dimensional structures do not reflect sound waves linearly, but into different directions. This means that the sound is distributed evenly throughout the room, creating a diffuse sound field that is generally perceived as more natural and pleasant.

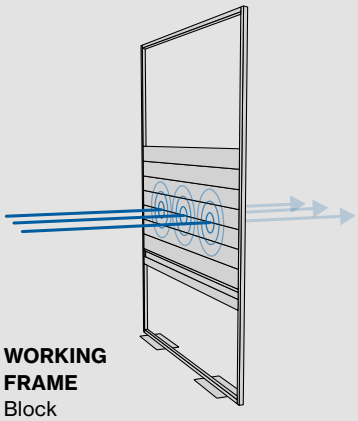
IT Le onde sonore che colpiscono una superficie dura e liscia vengono riflesse nell'ambiente. Le superfici irregolari o le strutture tridimensionali non riflettono le onde sonore in modo lineare bensì in direzioni diverse. In questo modo il suono si distribuisce uniformemente generando un campo sonoro diffuso, generalmente percepito come più naturale e piacevole.



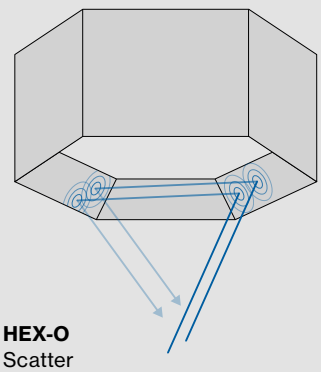
Examples based on products



TASK
Absorbtion
Assorbimento



WORKING FRAME
Block
Schermatura



HEX-O
Scatter
Diffusione

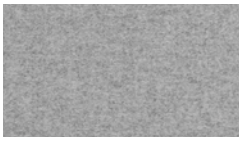
Acoustic colours



white
combinable with
signal white, pure white



marble grey
combinable with
white aluminium



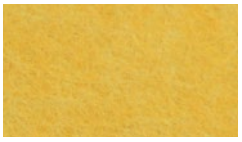
felt grey
combinable with
dark pearl grey



anthracite | F09N
combinable with
umbra grey



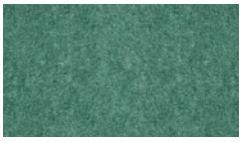
black
combinable with
jet black, signal black



royal yellow | F02N
combinable with
broom yellow



spring green | F03N



bottle green | F04N
combinable with
pastel green



bright blue | F05N



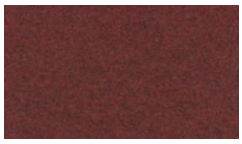
indigo blue | F06N
combinable with
pigeon blue



limestone | F14N
combinable with
velvet beige



autumn red | F11N
combinable with
coral red



oxide red | F12N
combinable with
copper



aubergine | F13N

Luminaire colours



signal white | B01F
RAL 9003



pure white | A01F
RAL 9010

velvet beige | B02F
RAL 085 80 10



gold dust | C05F
RAL 260-M*



copper | C17F
RAL 330-M*



broom yellow | C23F
RAL 1032



yellow orange | C20F
RAL 2000



coral red | C16F
RAL 3016



light pink | C18F
RAL 3015



madeira brown | B03F
RAL 050 40 40



pigeon blue | C08F
RAL 5014



signal blue | C14F
RAL 5005

pastel green | C10F
RAL 6019



light green | C11F
RAL 6027



white aluminium | A06F
RAL 9006



dark pearl grey | C03F
RAL 9023



umbra grey | A02F
RAL 7022



signal black | B04F
RAL 9004



jet black | A05F
RAL 9005

Get in contact

EN Whether you are planning a new building or an acoustic retrofit, our room acoustics experts will help you optimise your project. Based on your plans, we carry out a standardised calculation of the reverberation time and improve it in a targeted manner using our acoustic solutions. Our focus is on creating an atmosphere that is appropriate for the use of the room and pleasant for its users. We would be happy to advise you – please get in touch with us at **acoustics.planning@xal.com**

IT Che si tratti di costruzioni nuove o di interventi migliorativi dell'acustica: i nostri esperti vi aiuteranno ad ottimizzare gli ambienti. Basandoci sui vostri progetti, eseguiamo un calcolo a norma del tempo di riverbero e lo miglioriamo in modo mirato servendoci delle nostre soluzioni acustiche. L'obiettivo è quello di creare in ogni ambiente un'atmosfera adeguata al suo utilizzo e piacevole per le persone. Vi consigliamo volentieri: contattateci all'indirizzo **acoustics.planning@xal.com**

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Such edited or newly created images are labelled with the symbol (V).

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