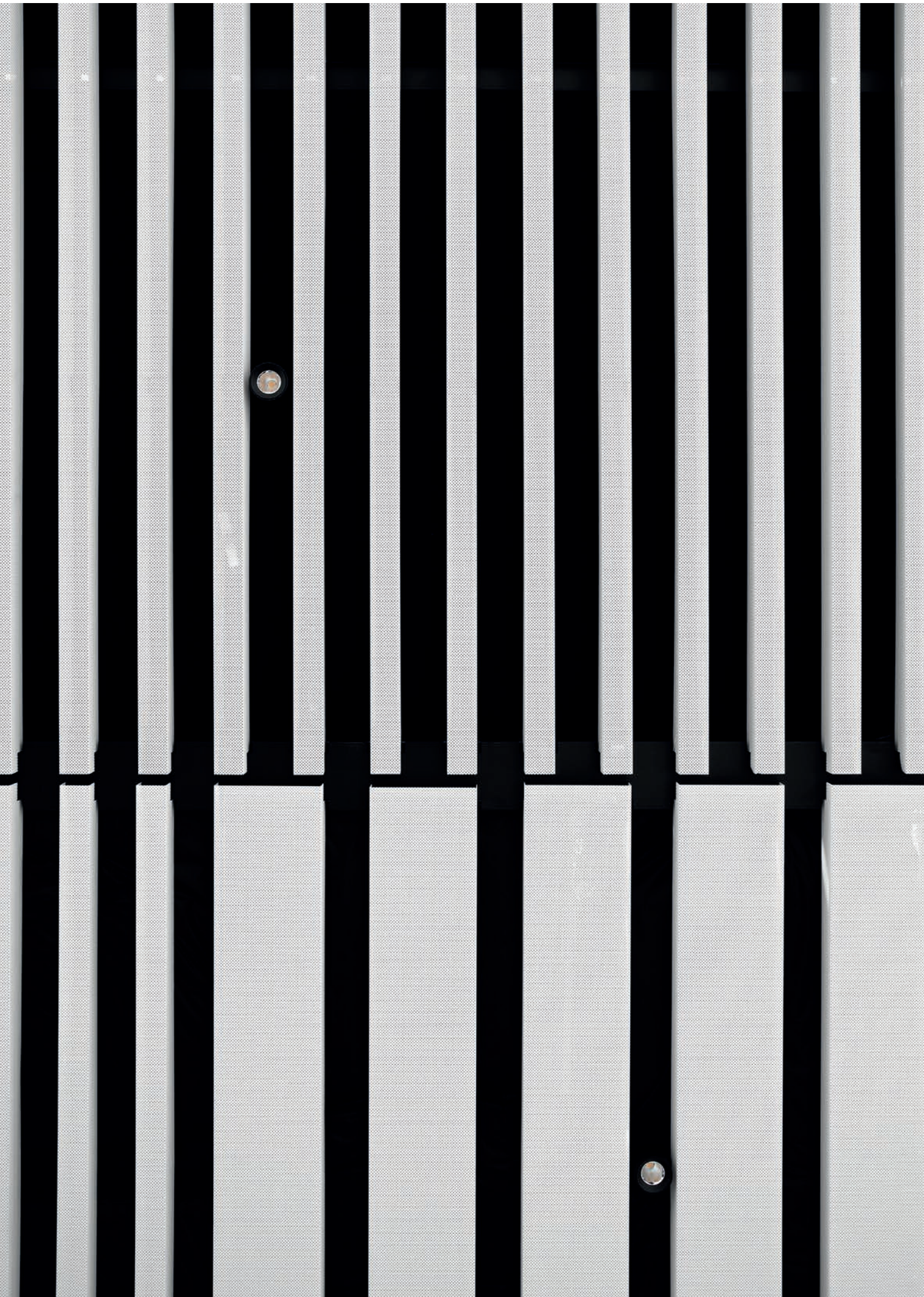
vektron ili

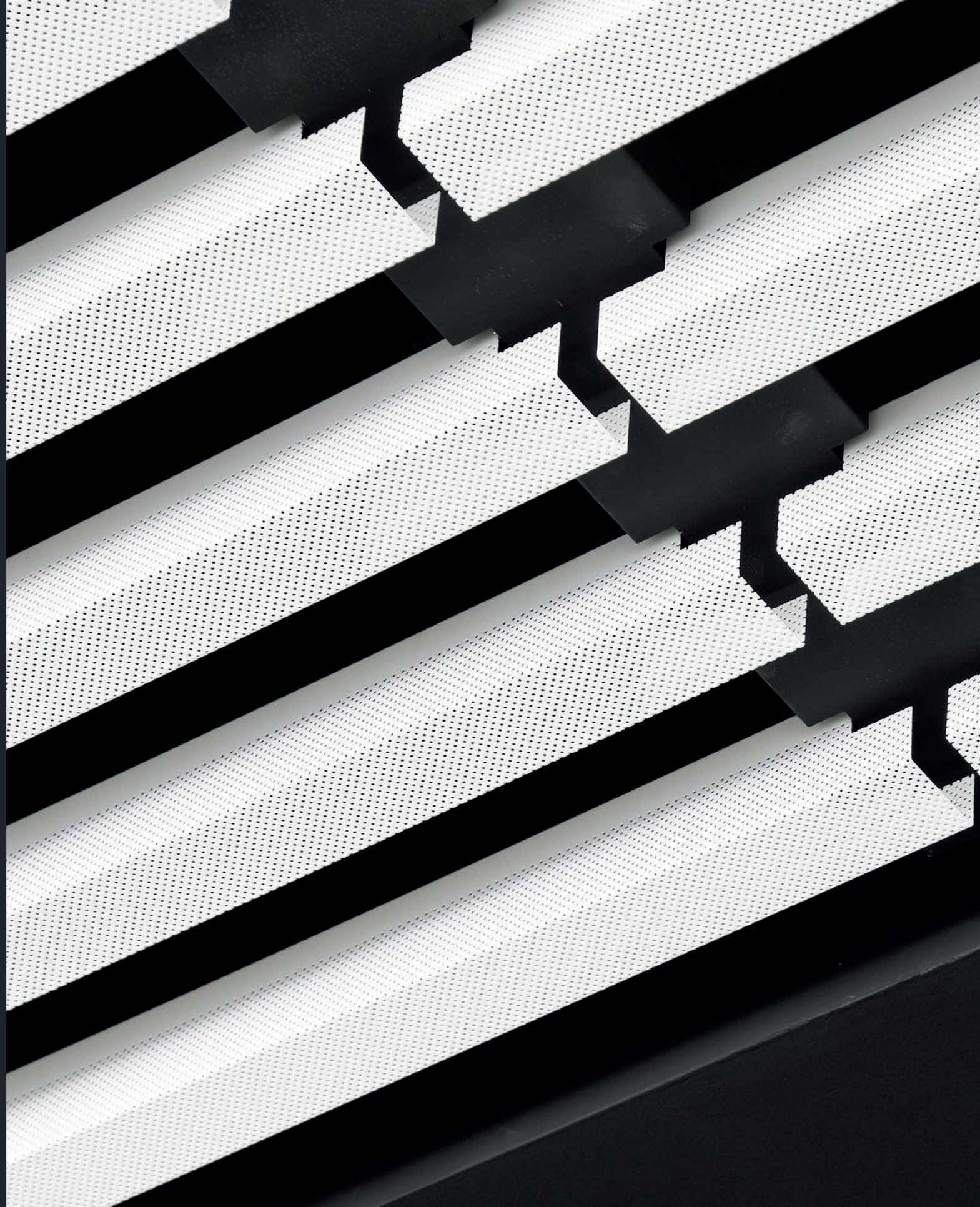


vektron table of content

vektron ili

Ceiling systems have to provide an answer on how to combine different integrations a ceiling typically holds: lighting, acoustic absorption, aesthetic finishing of a raw ceiling, ...

vektron ili is our answer to this question:
A half open ceiling system, made of baffles and bandrasters, creating an alternating pattern with an industrial look, easy accessible plenum space, performant acoustic properties and integrated luminaires.



vektron ili

vektron ili consists of two main parts: a baffle and a supporting bandraster which is attached to the ceiling.

Each baffle is provided with polyester wool. In combination with fully perforated baffles the acoustic comfort of a room improves due to a decrease of reverberating sounds which leads to an increased optimal auditive comfort.

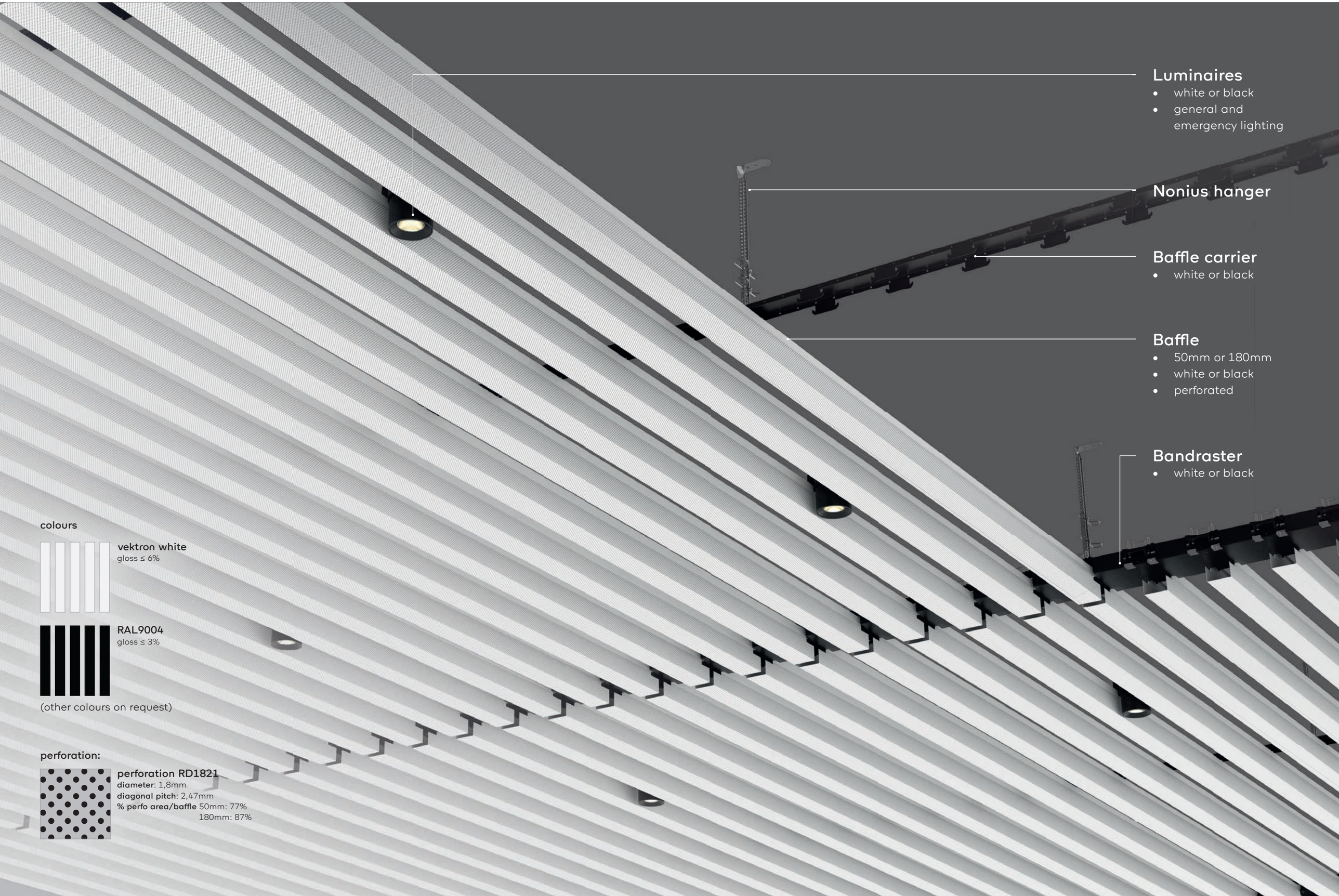
High quality luminaires can be clipped in between the vektron ili-baffles to illuminate office spaces and to yield optimal work environments.
vektron offers several kinds of luminaires: fixed downlight and wallwasher modules, directional spotlights and emergency lighting.

Project Renson
Location Kruisem, Belgium

Architect Binst Architects
Photographer kreon

vektron ili

components & finishes



Luminaires
- white or black
- general and emergency lighting

Nonius hanger

Baffle carrier
- white or black

Baffle
- 50mm or 180mm
- white or black
- perforated

Bandraster
- white or black

colours

vektron white
gloss ≤ 6%

RAL9004
gloss ≤ 3%

(other colours on request)

perforation:

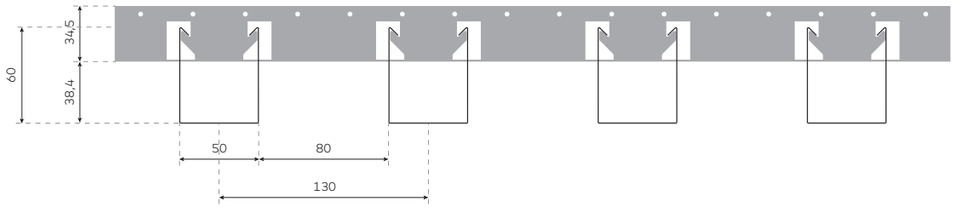
perforation RD1821
diameter: 1,8mm
diagonal pitch: 2,47mm
% perfo area/baffle 50mm: 77%
180mm: 87%

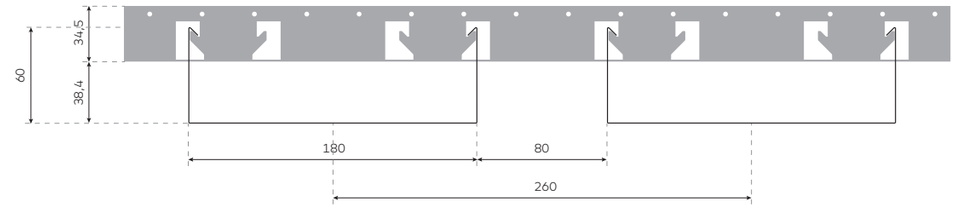
vektron ili

sizes & dimensions

vektron ili is available in two different set-ups.
Both consist of the same supporting bandraster
but the size of the baffles varies.

The smallest baffle is 50mm wide with a pitch
of 130mm centre-to-centre distance.
The larger baffle measures 180mm in width and
has a pitch of twice the size.





vektron ili
lighting & emergency

No ceiling without lighting.

vektron ili is compatible with different types of luminaires for general lighting or emergency lighting.

kreon aplis 60 is a range of round shaped downlights with an aperture of 60mm, installed flush with the baffles of vektron ili.

Equipped with the latest high performance faceted reflector in a fixed downlight or wallwash luminaire they offer optimal efficiency and uniformity.

kreon holon 60 directional is a spotlight with a rotational adjustment of 360° and an angular adjustment of 90°, which when combined with the choice of superspot, spot, flood or wide flood reflector, provides a versatile general or accent lighting tool.

Apart from these types of general lighting solutions, vektron ili can be equipped with emergency lighting: a discreet luminaire suitable for escape route or anti-panic purposes and an additional emergency module for direction signage.

Each of these luminaire are supplied with a battery to ensure at least 180 minutes of emergency lighting.

holon 60 directional, black

aplis 60 downlight, white

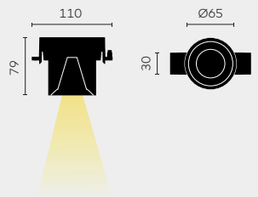
aplis 60 wallwasher, black

emergency lighting, black

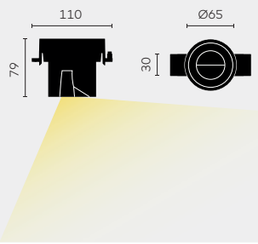
emergency sign with white module

aplis 60

aplis 60 downlight



aplis 60 wallwasher



	Colour	CS-code	Light sources	9027 2700K, CRI90+	9030 3000K, CRI90+	9040 4000K, CRI90+	TW ❶ tunable white (2700K-5000K), CRI90+	SSP superspot (18°)	SP spot (34°)	FL flood (54°)	WFL wide flood (69°)	Required accessories
aplis 60 downlight **Gear:** excl. ⟐	○	CS**937361**	①	●	●	●	●	●	●	●	●	■
	●	CS**937362**	①	●	●	●	●	●	●	●	●	■
aplis 60 wallwasher **Gear:** excl. ⟐	○	CS**937561**	②	●	●	●	●					■
	●	CS**937562**	②	●	●	●	●					■

■ **Required accessories**

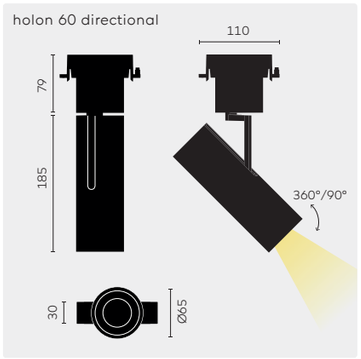
Gearbox, 4 luminaires	CS**737364**	gearbox, 350mA, ON/OFF
	CS**737366**	gearbox, 350mA, DALI
	CS**737464**	gearbox, 300mA, ON/OFF
	CS**737466**	gearbox, 300mA, DALI
Gearbox, 2 luminaires	CS**737764**	gearbox, 350mA, ON/OFF
	CS**737766**	gearbox, 350mA, DALI
	CS**737864**	gearbox, 300mA, ON/OFF
	CS**737866**	gearbox, 300mA, DALI
Connector loop	CS**706860**	connector loop, 2-pole

			CRI	CCT	Wattage	Drive current	Fixture lumen
①	LED	**SSP**	CRI90+	2700K/3000K/4000K	9,9W	300mA	566lm
	LED	**SP**	CRI90+	2700K/3000K/4000K	9,9W	300mA	717lm
				2700K-5000K	2x11W		905lm
	LED	**FL**	CRI90+	2700K/3000K/4000K	12W	350mA	1037lm
				2700K-5000K	2x11W	300mA	890lm
	LED	**WFL**	CRI90+	2700K/3000K/4000K	12W	350mA	1088lm
				2700K-5000K	2x11W	300mA	933lm
②	LED	**WW**	CRI90+	2700K/3000K/4000K	9,9W	300mA	807lm
				2700K-5000K	2x11W		837lm-1111lm

REMARKS
❶ Cannot be combined with superspot reflector.

IP40

holon 60



		Colour	CS-code	Light sources	9027 2700K, CRI90+	9030 3000K, CRI90+	9040 4000K, CRI90+	TW ❶ tunable white (2700K-5000K), CRI90+	SSP superspot (18°)	SP spot (34°)	FL flood (54°)	WFL wide flood (69°)	Required accessories
	**holon 60 directional, low louvre** **Gear:** excl. ⟐	○	CS**962371**	①	●	●	●	●	●	●	●	●	■
		●	CS**963372**	①	●	●	●	●	●	●	●	●	■
	**holon 60 directional, deep louvre** **Gear:** excl. ⟐	○	CS**962271**	②	●	●	●	●	●	●	●		■
		●	CS**962272**	②	●	●	●	●	●	●	●		■
		◐	CS**962275**	②	●	●	●	●	●	●	●		■

■ **Required accessories**

Gearbox, 4 luminaires	CS**737364**	gearbox, 350mA, ON/OFF
	CS**737366**	gearbox, 350mA, DALI
	CS**737464**	gearbox, 300mA, ON/OFF
	CS**737466**	gearbox, 300mA, DALI
Gearbox, 2 luminaires	CS**737764**	gearbox, 350mA, ON/OFF
	CS**737766**	gearbox, 350mA, DALI
	CS**737864**	gearbox, 300mA, ON/OFF
	CS**737866**	gearbox, 300mA, DALI
Connector loop	CS**706860**	connector loop, 2-pole

		CRI	CCT	Voltage	Wattage	Fixture lumen
① LED	**SSP**	CRI90	2700K/3000K/4000K	230V	10,2W	808lm
	SP	CRI90+	2700K/3000K/4000K	230V	10,2W	808lm
			2700K-5000K		TBD	TBD
	FL& WFL	CRI90+	2700K/3000K/4000K	230V	11,9W	1211lm
			2700K-5000K		TBD	TBD
② LED	**SSP & SP**	CRI90	2700K/3000K/4000K	230V	10,2W	788lm
	FL	CRI90	2700K/3000K/4000K	230V	11,9W	1146lm

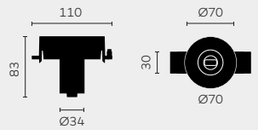
REMARKS
❶ Cannot be combined with superspot reflector.

◐ white luminaire with black louvre

IP40

vektron ili
emergency

emergency lighting



emergency sign module + sign

icons for emergency signs

		Colour	CS-code	Light sources	Required accessories
	**emergency escape route lighting** ❶	○	CS**957031**	①	■
		●	CS**957032**	①	■
	**emergency anti-panic lighting** ❶	○	CS**957041**	②	■
		●	CS**957042**	②	■
	**emergency sign module**	○	CS**990021**	③	■
		●	CS**990022**	③	■

■ **Required accessories**

Emergency sign	CS**790021**	emergency exit sign double sided - arrow down
	CS**790121**	emergency exit sign double sided - arrow side
	CS**790221**	emergency exit sign double sided - arrow up

	autonomy	CCT	Voltage	Wattage	Fixture lumen
① LED	180 min.	5000K	230V	0,9W	210lm
② LED	180 min.	5000K	230V	0,9W	220lm

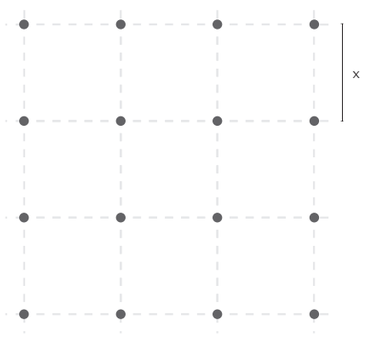
REMARKS
❶ 180min. emergency battery

IP20

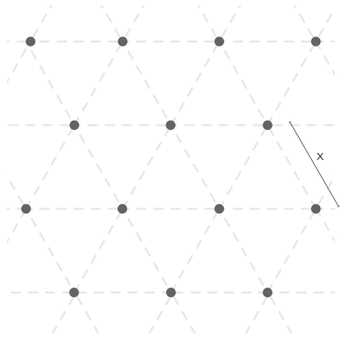
light uniformity

Lighting in vektron ili ceilings aims for an optimal light uniformity in large open spaces like offices.

This uniform spread of light is optimized by placing the luminaires in a quadratic or triangular grid. This pattern is maintained throughout the entire project.
This grid is calculated based on the height of the ceiling in combination with the desired light uniformity.



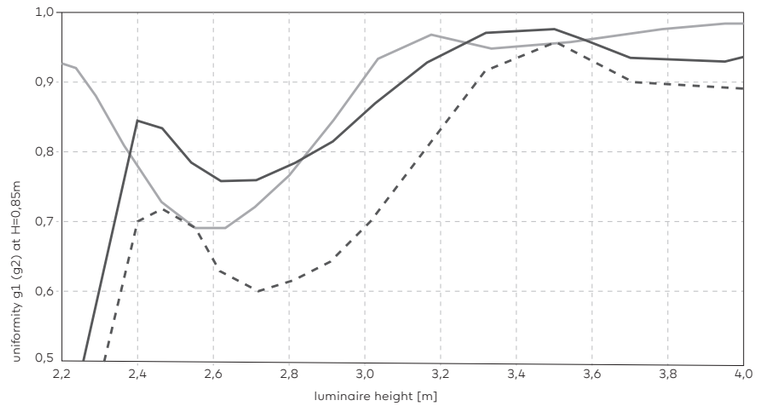
quadratic grid
(x = grid size)



triangular grid
(x = grid size)

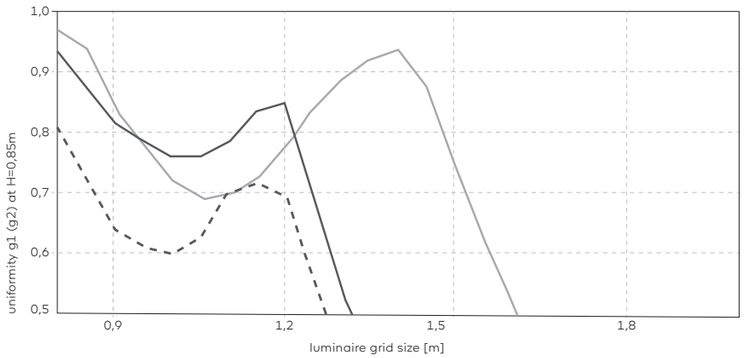
The graphs below show the light uniformity depending on the height of the luminaire in correlation to the size of the grid.

The first graph maintains a fixed grid size, combined with a variable ceiling height.
The other shows the uniformity of different grid sizes with a fixed luminaire height.



luminaire (flood optic): fixed grid size (1,2m), variable luminaire height

g1 (min : mean) quadratic grid
g2 (min : max) quadratic grid
g1 (min : mean) triangular grid



luminaire (flood optic): variable grid size, fixed luminaire height (2,4m)

g1 (min : mean) quadratic grid
g2 (min : max) quadratic grid
g1 (min : mean) triangular grid

vektron ili
acoustics

Ceilings have a considerable influence on the acoustic performance of a space and should be designed in such a way as to address the aural demands of the occupants within.

Sound absorption is the ability of a surface to absorb sound, to minimize sound reflection in the room. Reflected sounds create undesired and uncomfortable reverberations throughout the area and will ultimately increase the perceived sound level.

vektron suspended ceilings are an important factor in reducing these undesired reflections through the use of sound absorbing materials, combined with the perforations in the ceiling allowing the sound to pass through.

The sound absorption coefficient a_w is the fraction of the total sound that is absorbed by the suspended ceiling. The remaining unabsorbed fraction is reflected back into the room.

The sound absorption coefficient has a value between 0,0 (no absorption - all the sound is reflected) and 1,0 (complete absorption - equivalent to an open window).

The absorption factor is measured according EN20354:2003 and EN11654:1997.
vektron ili is equipped with an acoustic fleece and polyester wool.

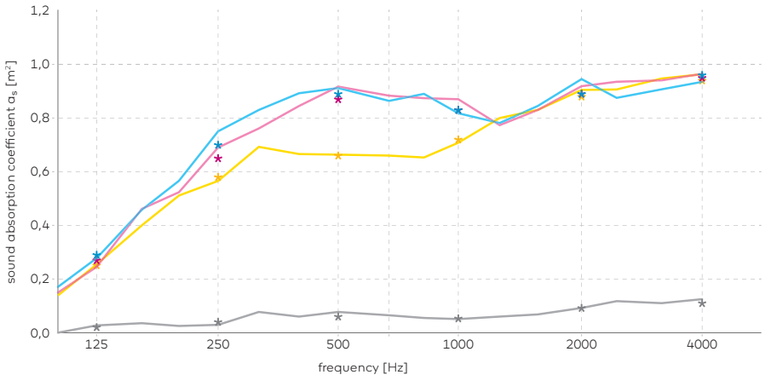
Project Renson
Location Kruisem, Belgium

Architect Binst Architects
Photographer kreon

vektron ili acoustics

ili 130 60 x 50	no polyester wool	polyester wool 40/150 vertical 150mm in panels	polyester wool 40/35 horizontal soft side on panel	polyester wool 40/35 horizontal hard side on panel
α_w (ISO 11654)	0,10	(H) 0,70	0,85	0,90
NRC (ATM - C423)	0,05	0,70	0,85	0,85
SAA (ASTM - C423)	0,06	0,71	0,81	0,83

frequency [Hz]	sound absorption coefficent α_s [m²]			
125	0,02	0,25	0,27	0,29
250	0,04	0,58	0,65	0,70
500	0,06	0,66	0,87	0,89
1000	0,05	0,72	0,83	0,83
2000	0,09	0,88	0,89	0,89
4000	0,11	0,94	0,95	0,96



no polyester wool

polyester wool 40/150 vertical, 150mm in panels

polyester wool 40/35 horizontal, soft side on panel

polyester wool 40/35 horizontal, hard side on panel

vektron ili

concrete core activation

With the growing importance of energy-efficiency, the focus on advanced energy techniques increases. One of these upcoming techniques is concrete core activation.

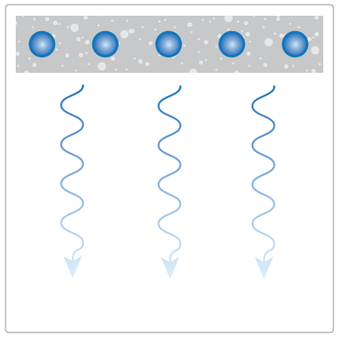
The concrete mass is activated, allowing it to store and release warmth or coolness at the desired moments, while serving as a buffer against extreme outside temperatures.

The cooling and heating of the concrete happens through pipes placed inside the concrete mass during the pouring process.

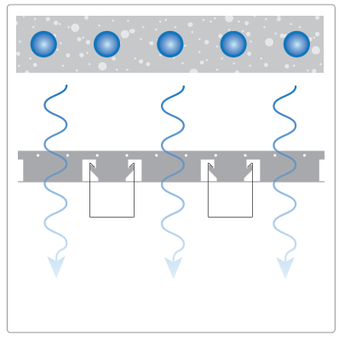
Warm or cold water flows through these tubes and regulates the temperature of the surrounding material of the floors and ceilings, which radiates towards the room itself.

A typical closed ceiling would eliminate the radiation from the activated concrete core.

vektron ili, with its half open structure and perforated baffles, allows for temperature exchange between the room and the concrete ceiling. With an open space of 60%, vektron ili guarantuees a 94% return of the thermal power of the activated concrete core above.



η = 100%
ceiling coverage: 0%



η = 94%
ceiling coverage: 40%

REMARKS
η = theoretical value
Measurements pending

vektron ili

Project Renson
Location Kruisem, Belgium

Architect Binst Architects
Photographer kreon

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