



CHILLED CEILING INVISIBLE AIR  
AQUILO  
Perfectly integrated

Tailor-made solutions for indoor climate





## PERFECTLY INTEGRATED

The chilled ceiling invisible air Aquilo A51 is a powerful radiant ceiling system with integrated supply air and very high sound absorption capacity. The integrated supply air element creates an air roll which results in thorough indoor air circulation and high ventilation efficiency. At the same time, the supply air jet on the back of the ceiling panel increases the convective output, which enhances the heating and cooling effect in the room without any risk of draughts.

- Free of draught air according to SN, SIA and ISO standards
- Fulfils SIA 180 with regard to room heat storage capacity (45 Wh/m<sup>2</sup>K)
- Very high acoustic efficiency



**CEILING SYSTEM**  
closed with edge joint

**OPERATING PRINCIPLE**  
Radiation / Convection

**AIR SUPPLY**  
not visible

**CAPACITY WATER**  
Cooling: 103 W/m<sup>2</sup> (8 K), EN 14240  
Heating: 140 W/m<sup>2</sup> (15 K), EN 14037 :2003

**ACOUSTICS**  
 $\alpha_w$ : up to 0,90  
Sound absorption class A, EN ISO 11654






**ROOM COMFORT**  
Thermal comfort according to EN ISO 7730, SIA 382/1

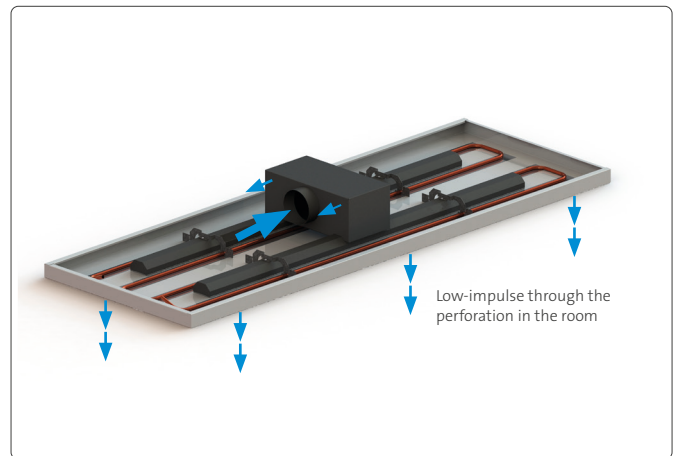
## ACTIVATION

Water system:

- Copper tube meander on heat conducting rails
- Copper tube:  $\varnothing$  outer 12 mm

## FUNCTIONS

 <b>Cooling</b>	 <b>Acoustics</b>	 <b>Supply and exhaust air</b>
 <b>Heating</b>	 <b>Integral components</b>	 <b>Compensation cold air drop</b>
 <b>Mass connection</b>		



Type 2 channel with flow characteristic of the supply air

## REFERENCES



Coworking Lounge Tessinerplatz, Zurich  
Cover picture: Administration building, Geneva



Deutsche Bahn Hammerbrookhöfe, Hamburg

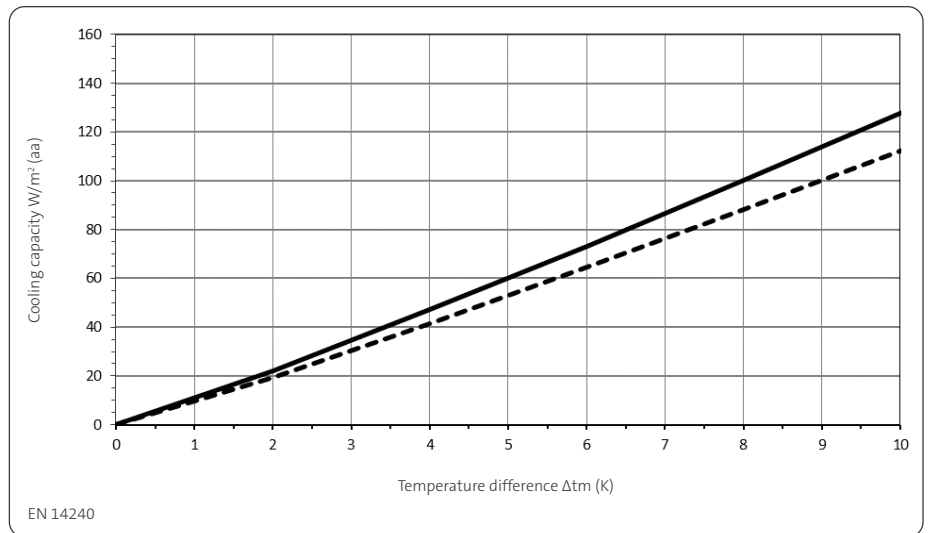
## CAPACITY DATA

### Initial data

Systems compared (with edge joint)	Invisible air Aquilo A51 ———	Metal chilled ceiling A11 - - - - -
Material	Steel	Steel
Perforation	Rg 1,5 – 11 %	Rg 1,5 – 11 %
Installation height	300 mm	300 mm
Activation	on metal	on metal
Acoustic inlay	Fleece	Fleece
Additional inlay	without	without

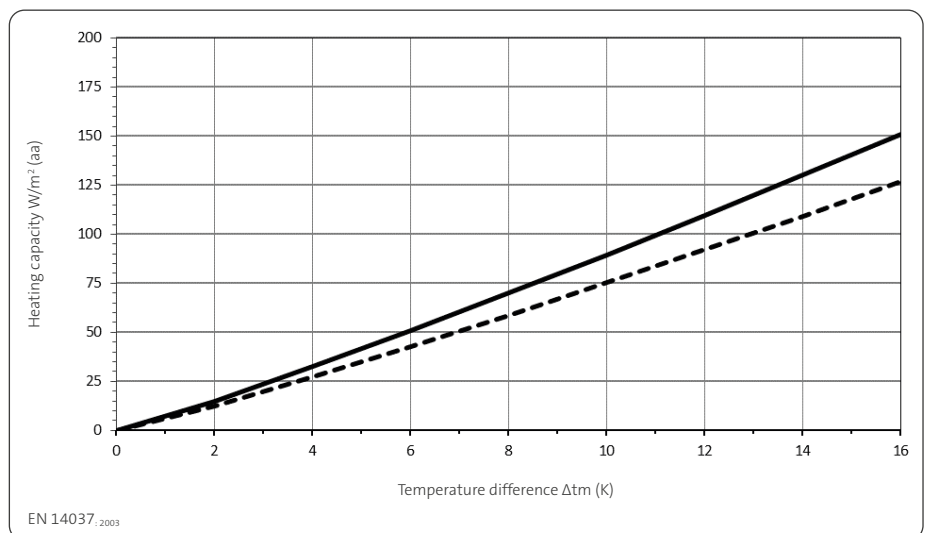
### Cooling

- Aquilo A51: 103 W/m<sup>2</sup> (8 K)  
+ Mass storage capacity up to 40 W/m<sup>2</sup>
- A11: 90 W/m<sup>2</sup> (8 K)



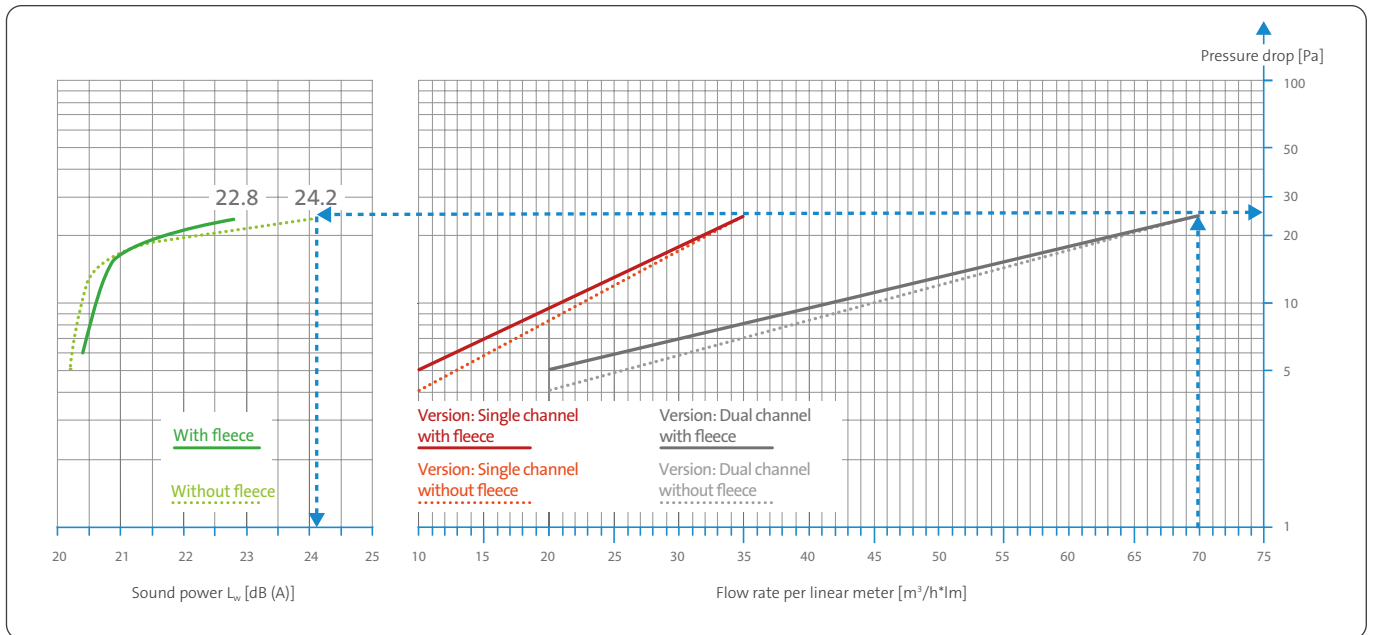
### Heating

- Aquilo A51: 140 W/m<sup>2</sup> (15 K)
- A11: 120 W/m<sup>2</sup> (15 K)



ACOUSTICS

Diagram for calculating sound power level  $L_{WA}$  and pressure drop



Insertion attenuation  $D_i$  in octave band

Centre frequency $f$ in [Hz]	63	125	250	500	1000	2000	4000	8000
$D_i$ with fleece in [dB]	25,9	17,6	13,7	13,7	10,7	10,6	7,2	6,7
$D_i$ without fleece in [dB]	26,9	17,8	13,9	14,0	10,6	11,3	7,6	7,6

All sound insertion attenuation tests were carried out by the Fraunhofer Institute for Building Physics in accordance with EN ISO 7235 (IBP Report P-TA 26/2016). The relevant insertion attenuation is calculated from the sound power values with and without Aquilo chilled sails.

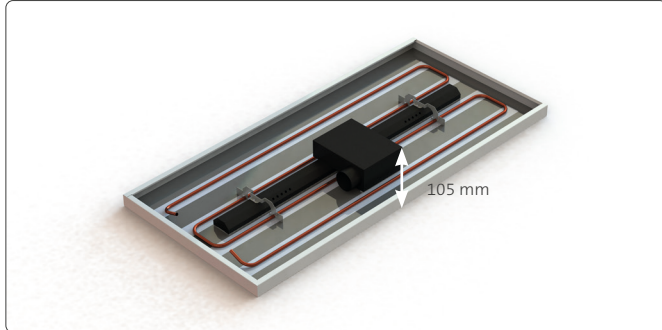
Sound absorption to EN ISO 11654

Ceiling panel	Sound absorption value $a_w$	Sound absorption class
with acoustic fleece without acoustic strips	0,65	C
with acoustic fleece with acoustic strips version 1	0,80	B
with acoustic fleece with acoustic strips version 2	0,85	B
with acoustic fleece with acoustic strips version 3	0,90	A

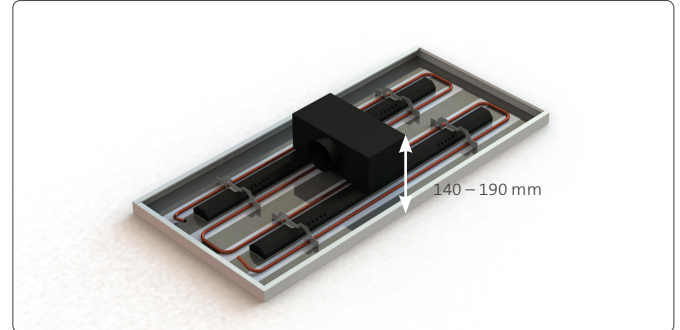
## TECHNICAL SPECIFICATIONS

### Types

1 Channel



2 Channel



### Dimensions ceiling panel construction

Standard dimensions	Type 1 channel	Type 2 channel
Panel width	310 – 1200 mm	600 – 1200 mm
Panel length	1000 – 2500 mm	1000 – 2500 mm
Panel height <sup>(1)</sup>	50 – 120 mm	50 – 120 mm
Suspension height (Minimum height 50 mm ceiling panel edge)	105 mm	140 – 190 mm <sup>(2)</sup>

1) Standard: Panel edge height 50 mm, angle of bend right angle / 2) Special versions possible from 105 mm

### Dimensions supply air connection

Air channel (mm)	800	900	1000	1100	1200	1300	1400	1500
Type 1 channel Ø DN (mm)	80	80	80	80	80	100	100	100
Type 2 channel Ø DN (mm)	100	100	100	125	125	125	125	125

### Material and weight

Material ceiling panel	Weight ceiling panel (incl. water)	Weight supply air element (steel sheet)
Aluminum 1,00 mm	4,0 – 6,5 kg/m <sup>2</sup>	4,0 – 6,0 kg/piece
Steel 0,70 mm	6,5 – 9,0 kg/m <sup>2</sup>	

### Versions

Perforations	Surface	Farben
Standard perforations	Powder coated	Standard RAL 9010
Other perforations on request	Digital printing on request	Other colours RAL/NCS on request

## FIRE PROTECTION

- Building material class A2-s1, d0, EN 13501-1 (depending on the acoustic inlay)

## CERTIFICATIONS

- ISO 9001
- Hygiene conform to VDI 6022 / SWKI VA104-01

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