



Compliant with
the European Standard EN 14037

Heating/Air Conditioning Radiant panel

Pulsar IX

TECHNICAL MANUAL

CONTENTS

Introduction	Page	3
Main advantages	Page	4
Technical specifications	Page	5
Weights and Dimensions	Page	6
Emission	Page	20
Mean surface temperature	Page	21
Lowest water flow	Page	26
Pressure drop	Page	26
Water connection diagram	Page	27
Operating limits	Page	28
Suggested lowest installation height	Page	28
Table of possible combinations	Page	28
Possible connections	Page	29
Accessories	Page	30
Hanging systems	Page	33
Non-active aesthetic panel - Version P	Page	34
Non-active aesthetic panel - Version W	Page	34
Pulsar with perforated panel	Page	35
Certifications	Page	36



The descriptions and illustrations provided in this publication are not binding: Sabiana reserves the right, whilst maintaining the essential characteristics of the types described and illustrated, to make, at any time, without the requirement to promptly update this piece of literature, any changes that it considers useful for the purpose of improvement or for any other manufacturing or commercial requirements.

SABIANA is the leading company in Europe in the design, production and sale of radiant panels operating on hot water, high temperature hot water and steam.

Since 1971, over 5 million square metres of panels installed in different environments (small, medium and large industries, hangars, gyms and theatres, small and large offices) prove the quality of the **SABIANA** radiant heating system and products.

Heat by radiation means absolute silence, no movement of air and a uniform temperature in the entire environment. In effect, being distributed better, the heat is more pleasant and comfort is optimised, without increasing the air temperature. The result is a feeling of absolute comfort with an air temperature that is 3°C lower than the operative temperature perceived by people.

The efficiency of the **SABIANA** radiant panels is also economic. In fact, besides the energy savings due to the fact that the operative temperature is different from the air temperature, this totally static product does not, unlike the traditional systems, have an electric motor and does not require maintenance nor the consumption of electricity.

This translates into long-lasting efficiency. The **SABIANA** radiant panels have a practically unlimited duration.

The **SABIANA** radiant panels can be described as the hygienic heating system par excellence. The system does not create noise nor movement of air and therefore dust. In addition, it avoids annoying streams of air and the circulation of germs, dust and fragrances and thus represents an important contribution to the prevention of allergies and illnesses.



Thermal performance

- The **Pulsar** radiant panel is totally static (no circulation of air and no movement of dust).
- Very low thermal gradient between the floor and the ceiling.
- Extremely fast response to changes in settings, without thermal inertia.
- The operating principle of **Pulsar** radiant panels is reversible, and thus cooling operation is possible using the radiant ceiling panels, by connection to a chiller or heat pump.

Appearance

- None of the peripheral walls are affected by the installation.
- The **Pulsar** radiant panel can be perfectly integrated into all types of false ceiling.
- The visible side is perfectly smooth, adapting to any type of architecture.
- Other RAL colours available on request.

Modularity

- Given its modular dimensions and the design of the water connections, **Pulsar** panels can be installed in sequence with ceiling light panels, in complete compliance with the regulations on artificial lighting.

Hygiene

- The design of the **Pulsar** panel allows it to be installed in any building, including hospitals and clinics. Indeed, its completely smooth visible surface is recommended, as it allows sanitisation by spraying for combating nosocomial illnesses in hospitals.
- The radiation concept, by avoiding considerable movements of air, prevents the spreading of microbes and bacteriological pollution.

Safety

- **Pulsar** radiant panels are inaccessible to the people in the room. Therefore there is no risk of burning or electric shock in schools and paramedical environments.
- No risk of vandalism, in any environment.

Comfort

- By design, the **Pulsar** radiant panel guarantees a uniform temperature in all seasons.
- The **Pulsar** radiant panel is a totally static heating system without the circulation of air and without lifting dust.
- The operation of **Pulsar** is completely silent.
- In summer, the **Pulsar** panel can be used for cooling without creating steams of air and with a uniform temperature throughout the environment.

Savings

- The heating requirement of a building heated with **Pulsar** radiant panels is, according to the EN 12831 standard, much lower than the requirement with traditional heating systems.
- The experience acquired by **SABIANA** in the field of radiant panels guarantees the reliability of **Pulsar** over time.
- **Pulsar** does not require special maintenance and consequently has no maintenance costs.

Assembly

- The dimensions of **Pulsar** radiant panels make them easy to handle on site.
- The panels are connected by flexible pipes without welding.



Version P.IX
installed
within false ceiling



Version W.IX
free hanging



Version R.IX
for plasterboard
ceilings

CONNECTIONS SUPPLIED NOT MOUNTED

Technical description

SABIANA Pulsar radiant panels are supplied in four sizes, which can be perfectly integrated into any false ceiling.

Indeed, the lengths of 1.20, 1.80, 2.40 and 3.00 m ensure optimum integration into 600 x 600 mm modular ceilings, the standard dimension for false ceiling panels in Europe.

The visible side is perfectly flat, meaning that **Pulsar** radiant panels can match all types of false ceiling panels available on the market.

As standard, the panels are supplied in RAL 9016 colour, with a satin finish created by an epoxy-polyester coat dried in a furnace at 180 °C. Other RAL colours are also available for the architect to choose from.

The **Pulsar** radiant panels are made of a radiating galvanized steel plate, 1 mm thick.

On the panel is fixed a stainless steel pipe with 15 mm of external diameter.

The tube features are:

tube IX made of stainless steel 0,8 mm thick, EN 1.4512-AISI 409 100% tested with 40 bar air pressure; TIG electro-welded tube (EN 10217-7), in controlled atmosphere, under constant monitoring of the welding quality by means of eddy current brakes (EN 10893/2) and automatic detection of imperfections. Used raw materials: cold rolled sheets annealed in controlled atmosphere (EN 10088-2).

The galvanized omega strips welded to the panels hold the correct spacing of the tubes and secure the best surface contact between the tube and the panel.

The dimensional tolerances of the panels are in accordance with standard EN 14037-1 (radiant panel length $\pm 3,00$ mm, radiant panel width $\pm 2,00$ mm).

The paint complies with the European Standard 76/769/EEC.

Class of reaction to fire: A1

Emission of the radiant surface: $\epsilon = 0,96$

The **Pulsar** is supplied with an insulating layer of mineral wool (30 mm thick) protected by an aluminium sheet (25 micron thick) to be mounted on the top of the panel.

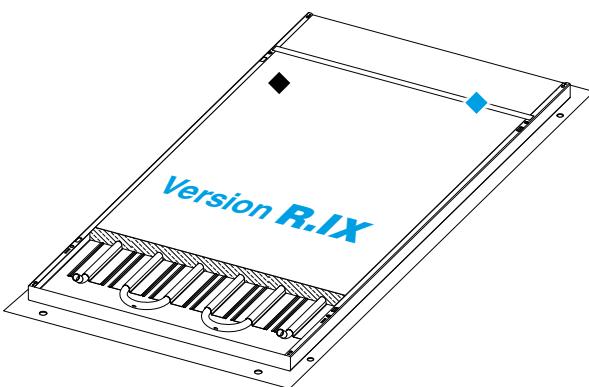
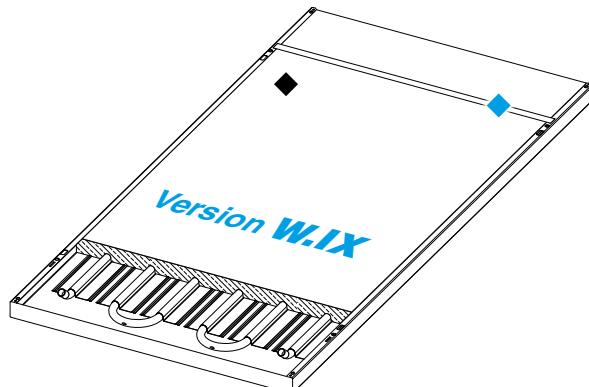
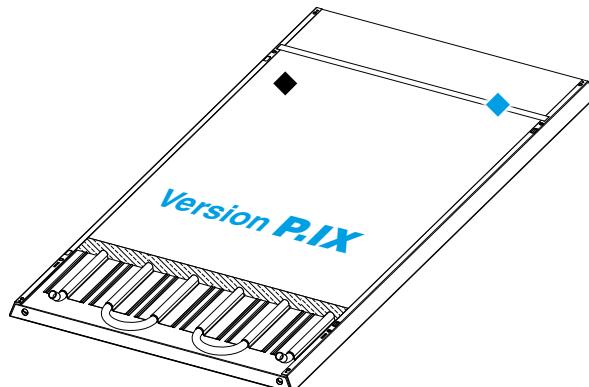
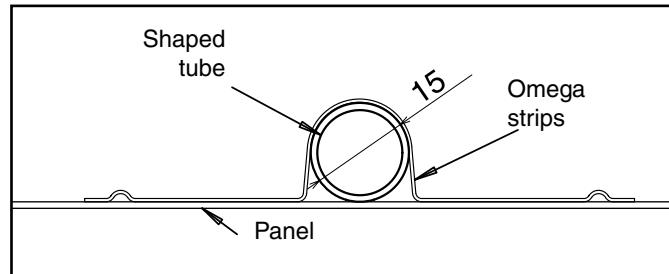
Insulation specifications:

Class A1 according to EN 13501-1 standards

Thermal conductivity 0,037 W/mK

Density 14 kg/m³

Thermal resistance 0,81 m²K/W



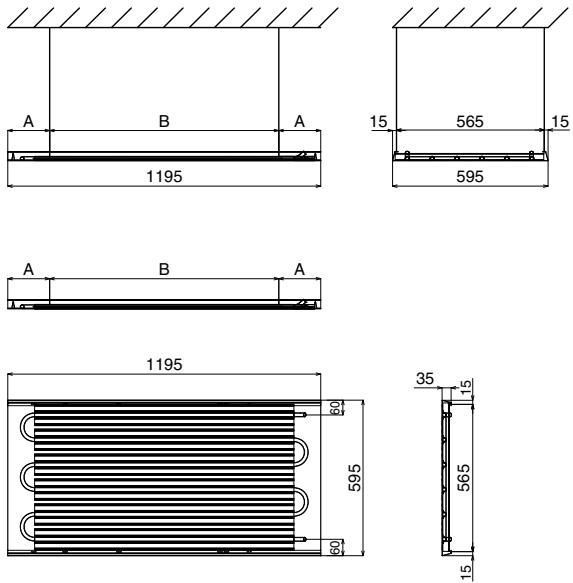
- ◆ Insulation, 30 mm thick (supplied not mounted)
- ◆ Insulation holding strip

Pulsar P.IX installed within false ceilings

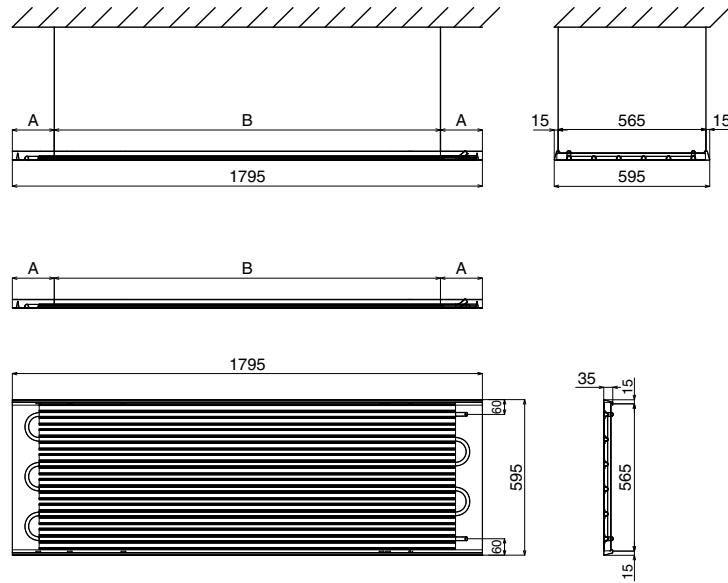
Weights and Dimensions

Pulsar P STANDARD

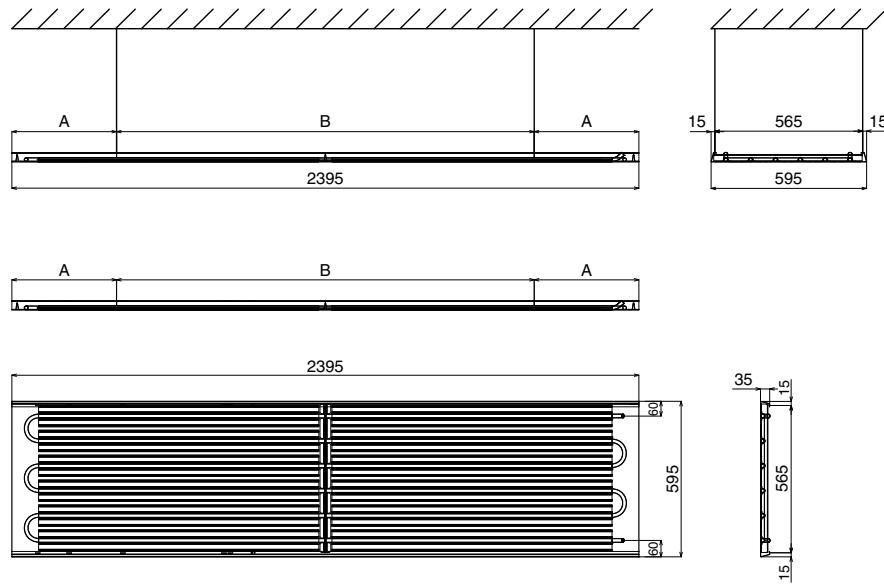
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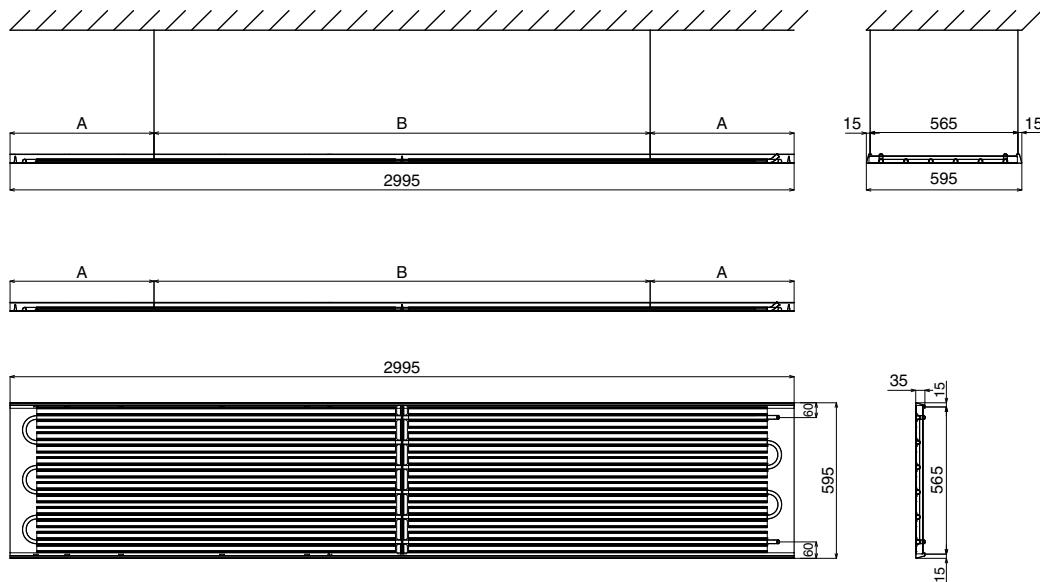
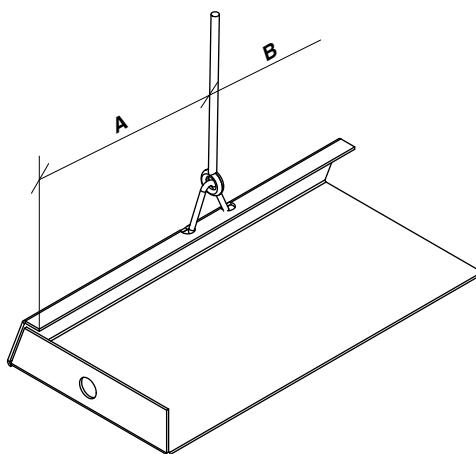


Size 2



Size 3



Pulsar P.IX installed within false ceilings**Weights and Dimensions****Pulsar P STANDARD****Size 4****Installation with CLIP**

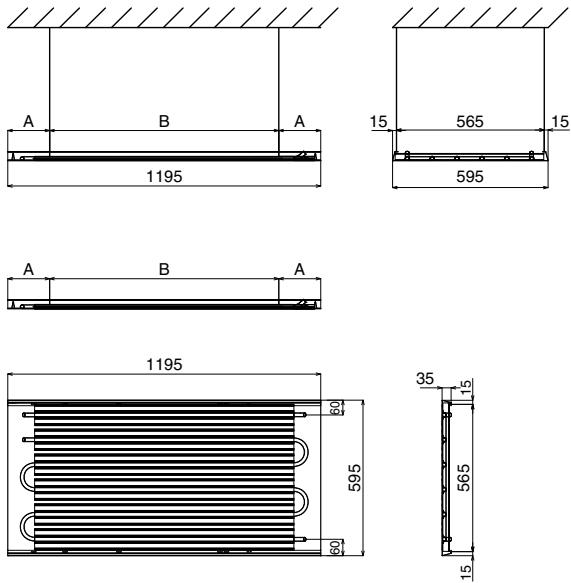
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					A	B		
P.IX	1	P.IX 1	0086001	1195	145	905	12,9	1,0
	2	P.IX 2	0086002	1795	145	1505	19,4	1,5
	3	P.IX 3	0086003	2395	385	1625	25,8	2,0
	4	P.IX 4	0086004	2995	535	1925	32,3	2,5

Pulsar P.IX installed within false ceilings

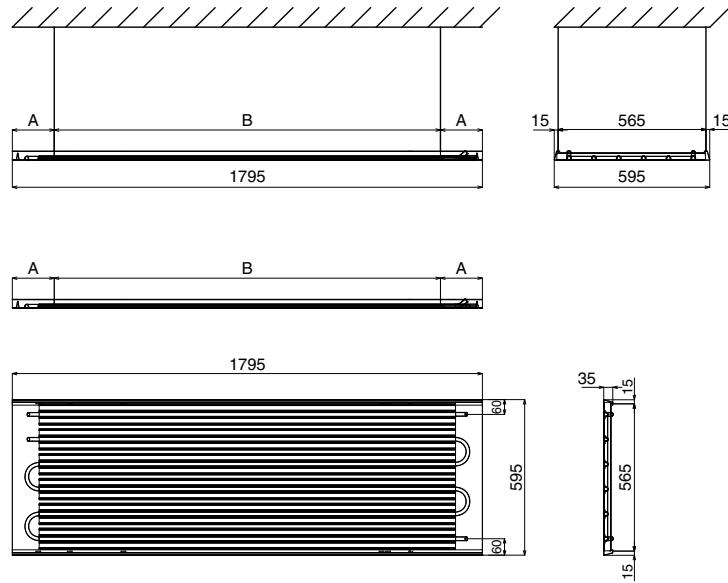
Weights and Dimensions

Pulsar PA

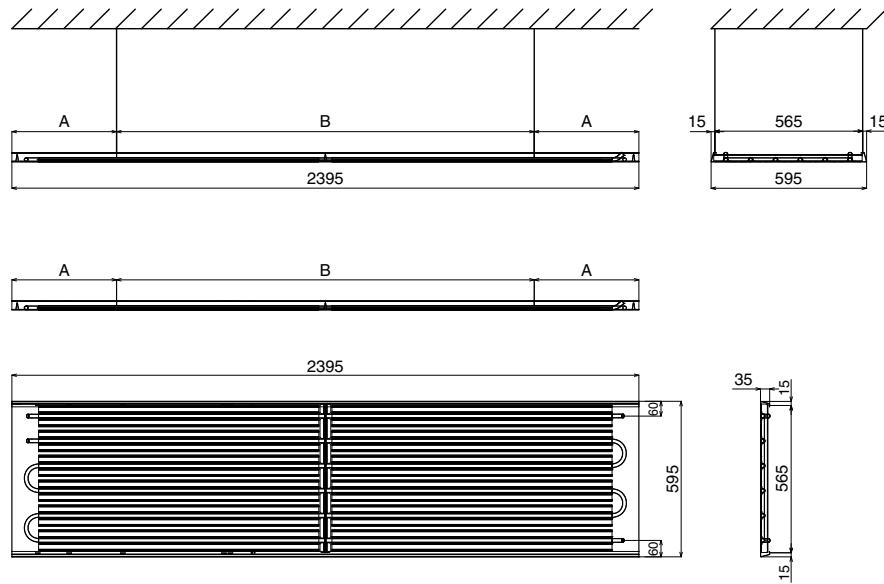
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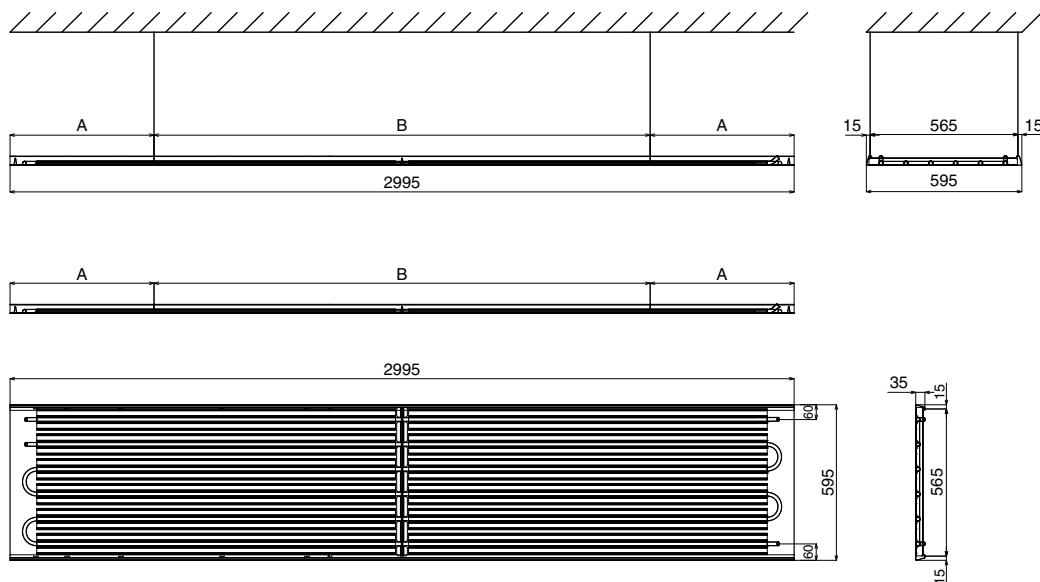
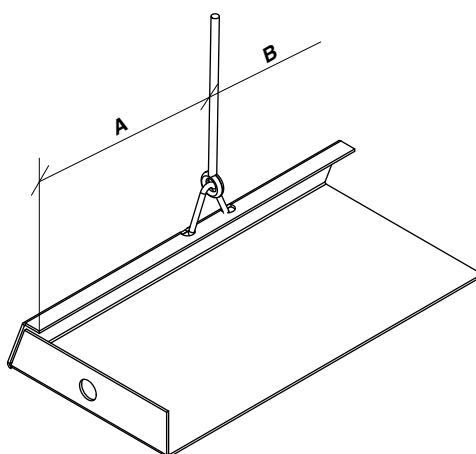


Size 2



Size 3



Pulsar P.IX installed within false ceilings**Weights and Dimensions****Pulsar PA****Size 4****Installation with CLIP**

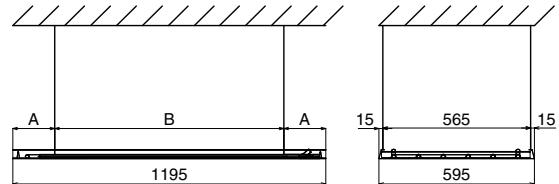
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					A	B		
PA.IX	1	PA.IX 1	0086011	1195	145	905	12,9	1,0
	2	PA.IX 2	0086012	1795	145	1505	19,4	1,5
	3	PA.IX 3	0086013	2395	385	1625	25,8	2,0
	4	PA.IX 4	0086014	2995	535	1925	32,3	2,5

Pulsar P.IX installed within false ceilings

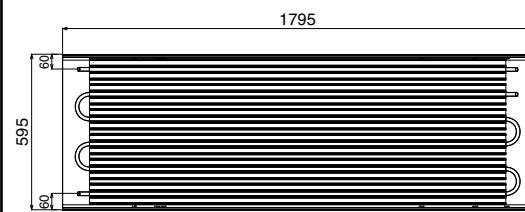
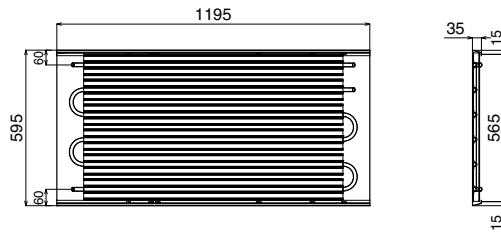
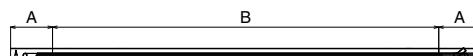
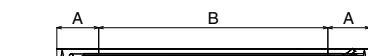
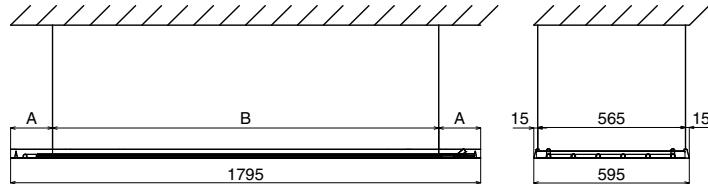
Weights and Dimensions

Pulsar PB

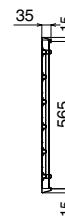
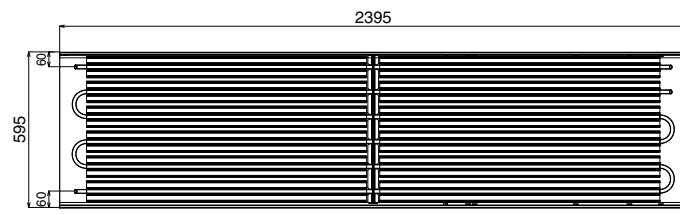
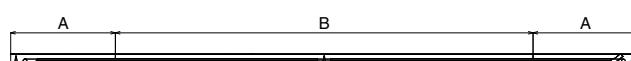
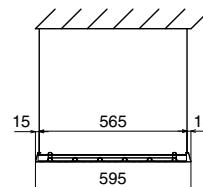
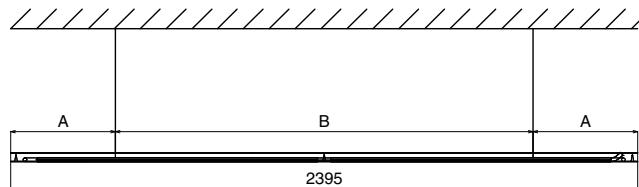
Size 1

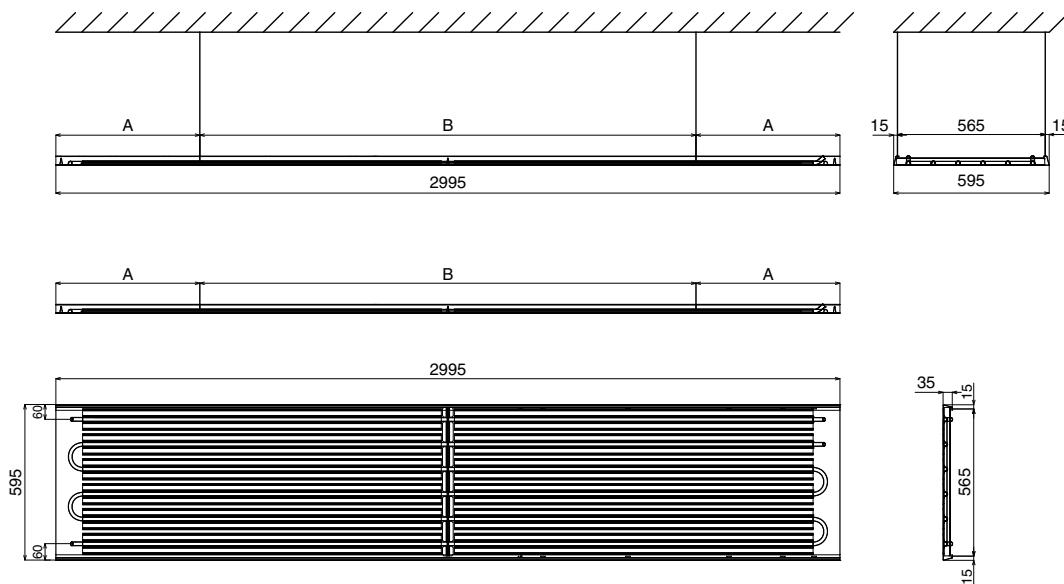
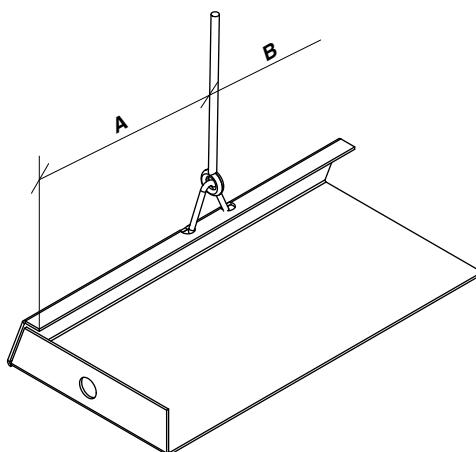


Size 2



Size 3



Pulsar P.IX installed within false ceilings**Weights and Dimensions****Pulsar PB****Size 4****Installation with CLIP**

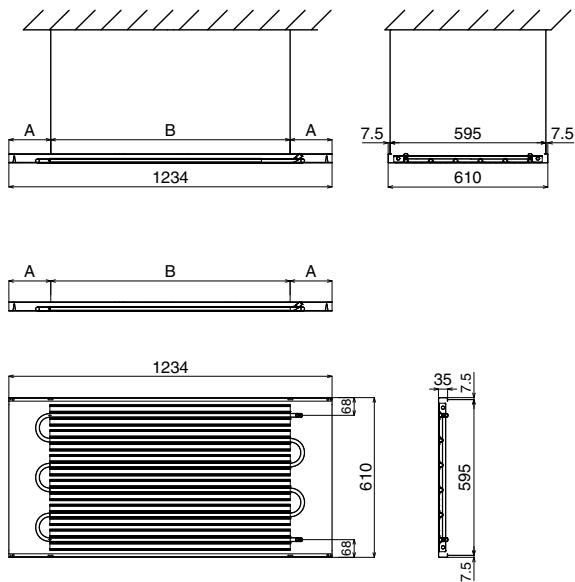
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					A	B		
PB.IX	1	PB.IX 1	0086021	1195	145	905	12,9	1,0
	2	PB.IX 2	0086022	1795	145	1505	19,4	1,5
	3	PB.IX 3	0086023	2395	385	1625	25,8	2,0
	4	PB.IX 4	0086024	2995	535	1925	32,3	2,5

Pulsar W.IX free hanging

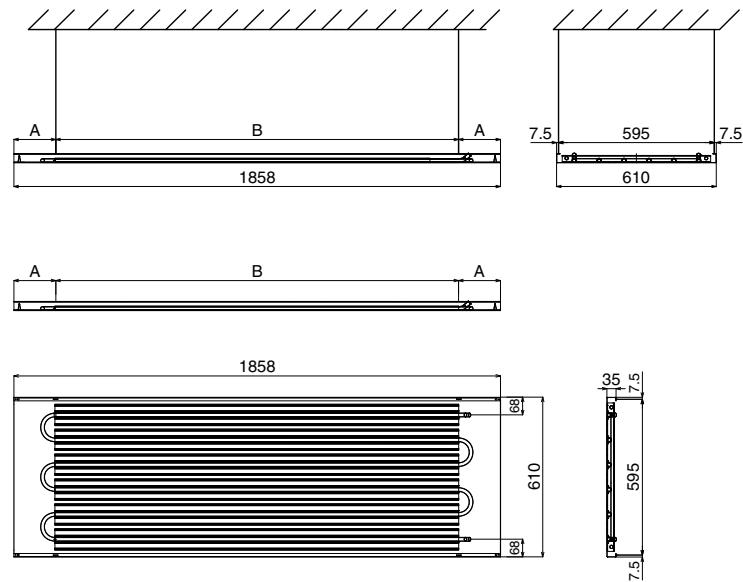
Weights and Dimensions

Pulsar W STANDARD

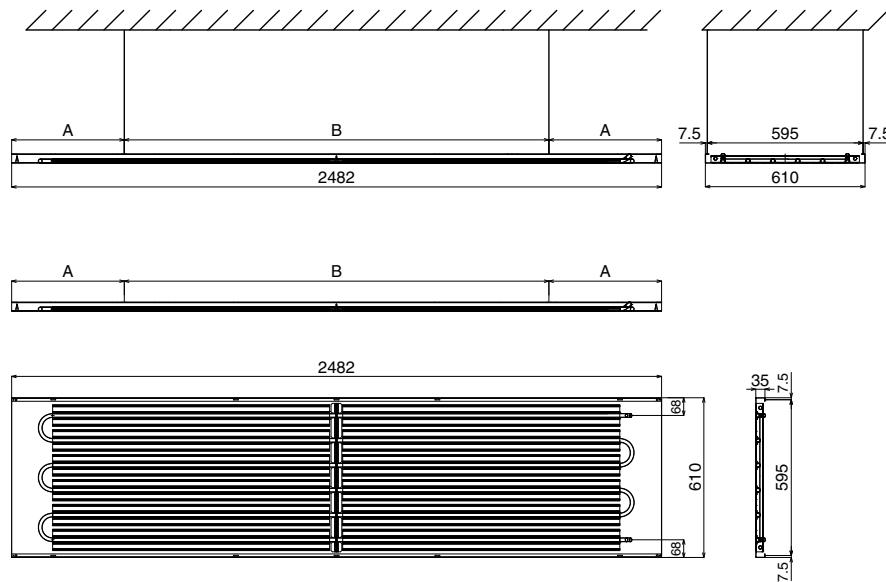
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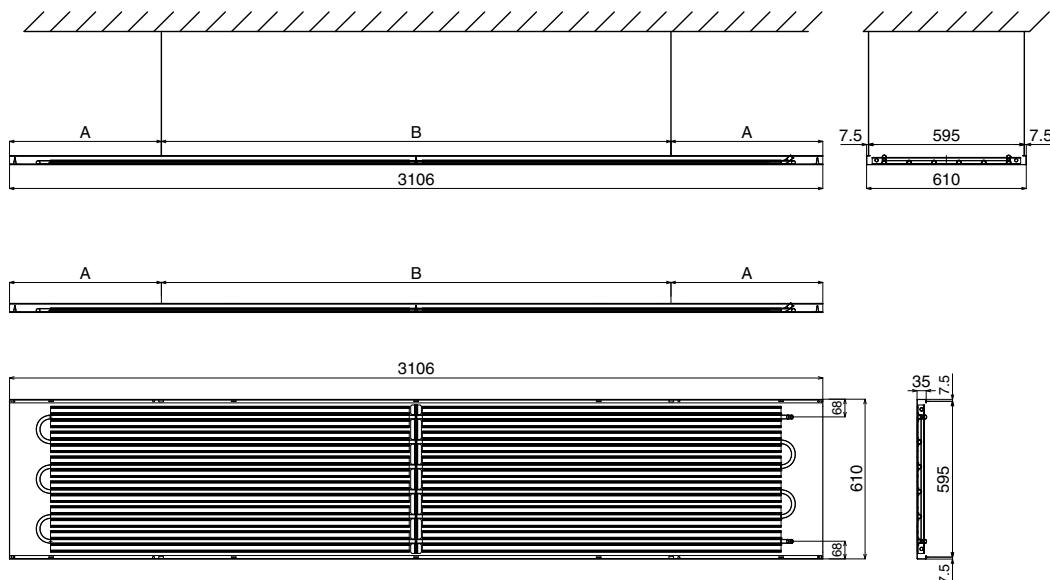
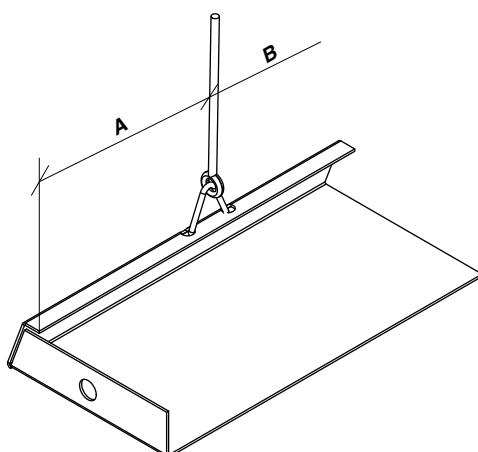


Size 2



Size 3



Pulsar W.IX free hanging**Weights and Dimensions****Pulsar W STANDARD****Size 4****Installation with CLIP**

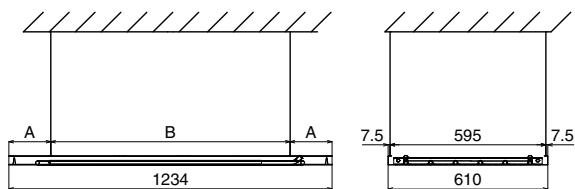
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					A	B		
W.IX	1	W.IX 1	0086251	1234	197	840	12,9	1,0
	2	W.IX 2	0086252	1858	197	1464	19,4	1,5
	3	W.IX 3	0086253	2482	445	1592	25,8	2,0
	4	W.IX 4	0086254	3106	595	1916	32,3	2,5

Pulsar W.IX free hanging

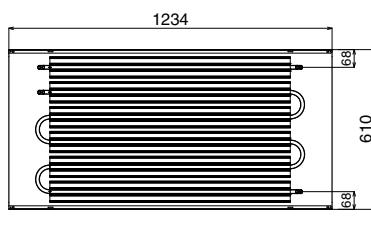
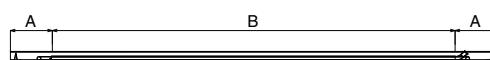
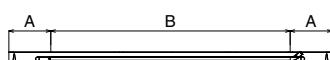
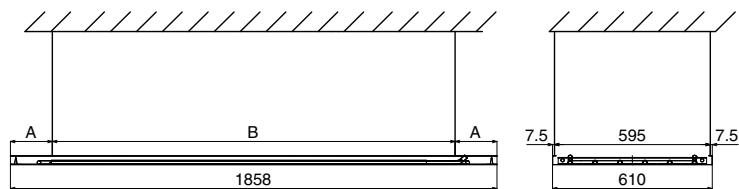
Weights and Dimensions

Pulsar WA

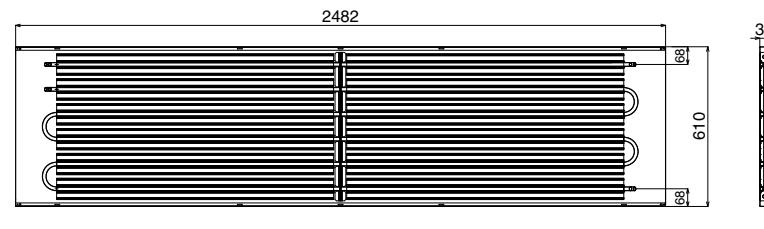
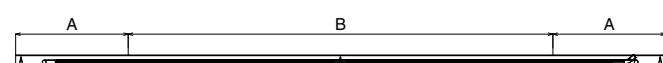
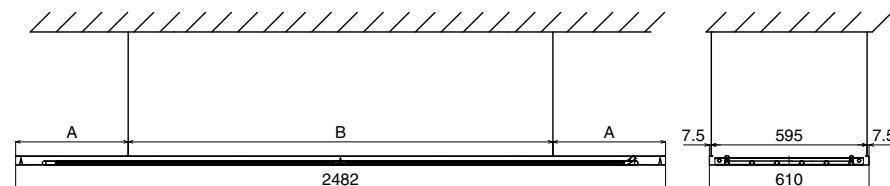
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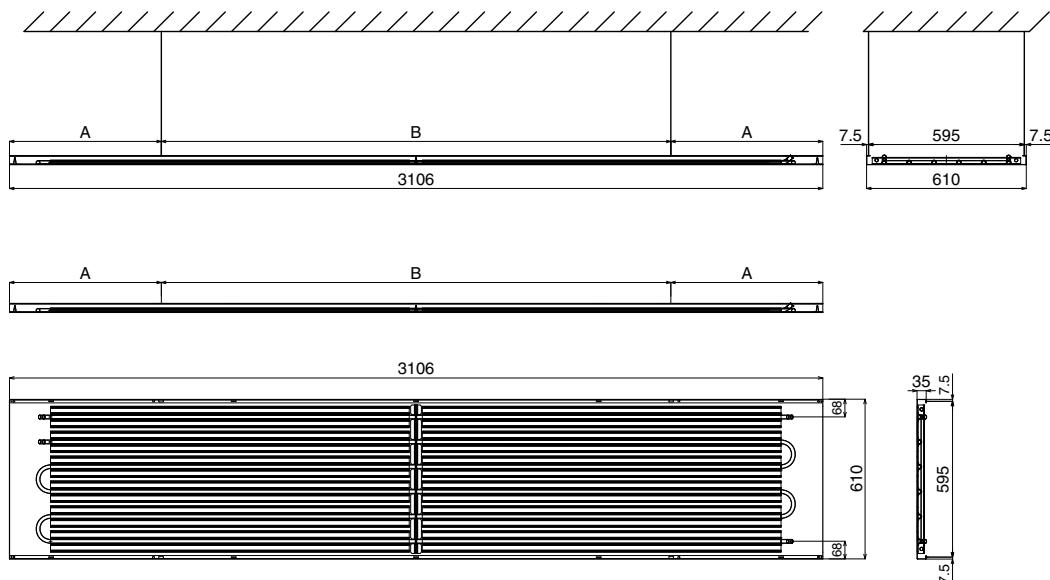
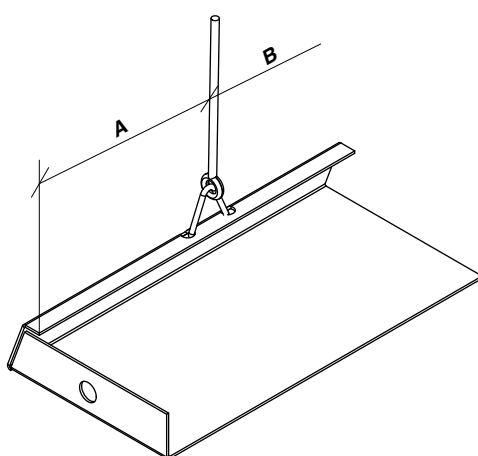


Size 2



Size 3



Pulsar W.IX free hanging**Weights and Dimensions****Pulsar WA****Size 4****Installation with CLIP**

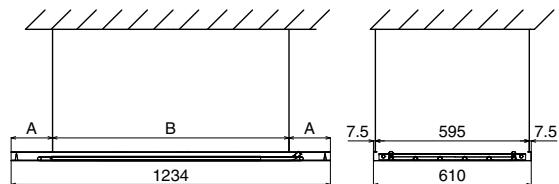
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					A	B		
WA.IX	1	WA.IX 1	0086261	1234	197	840	12,9	1,0
	2	WA.IX 2	0086262	1858	197	1464	19,4	1,5
	3	WA.IX 3	0086263	2482	445	1592	25,8	2,0
	4	WA.IX 4	0086264	3106	595	1916	32,3	2,5

Pulsar W.IX free hanging

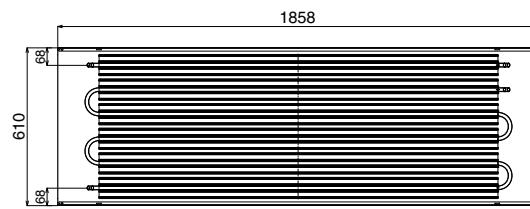
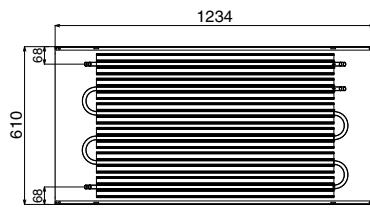
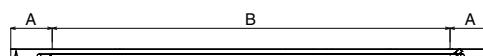
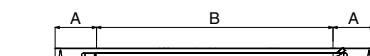
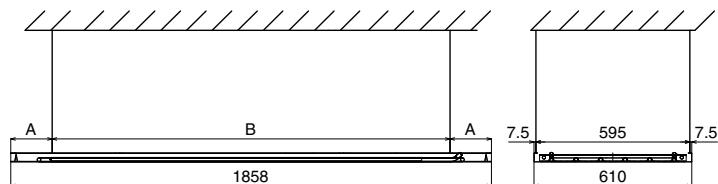
Weights and Dimensions

Pulsar WB

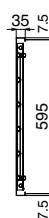
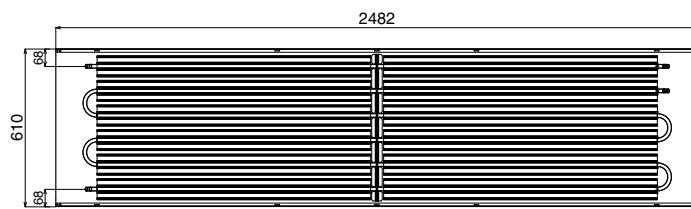
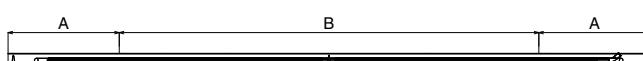
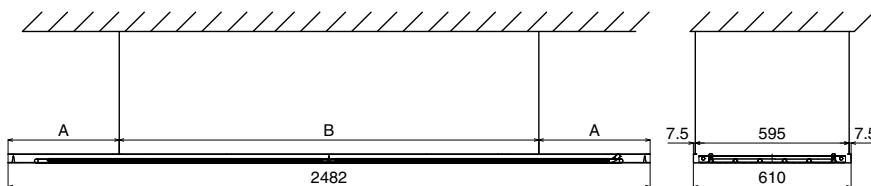
Size 1

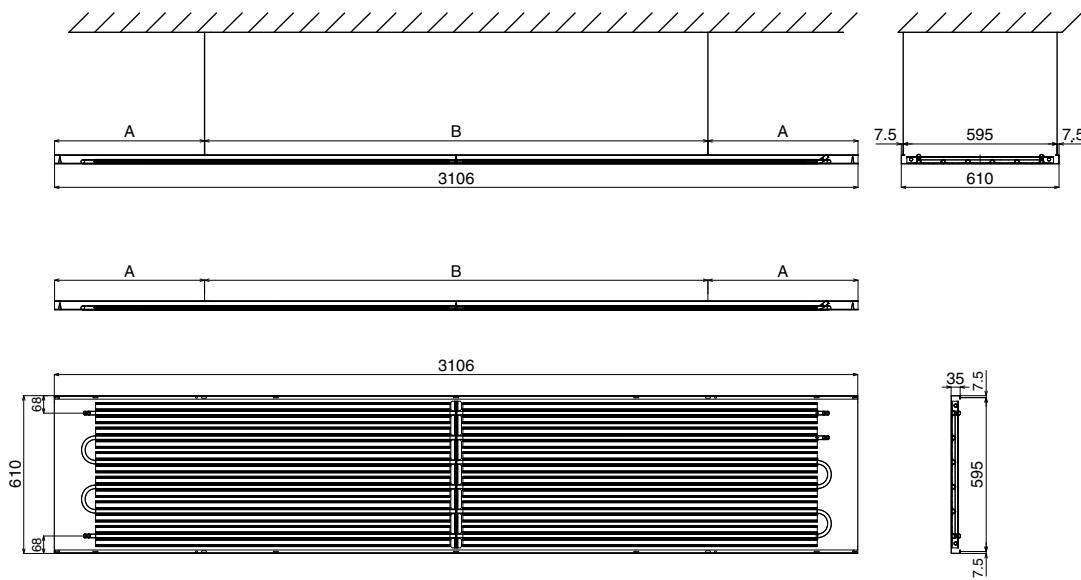
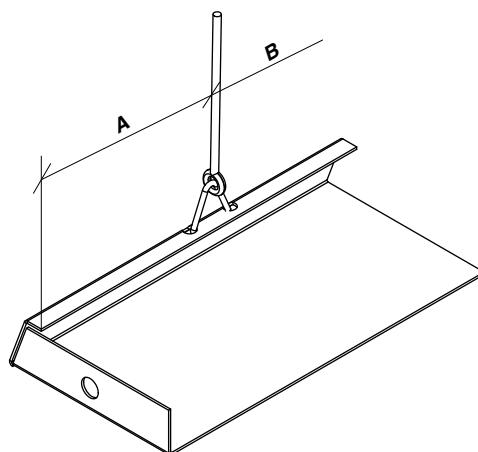


Size 2



Size 3



Pulsar W.IX free hanging**Weights and Dimensions****Pulsar WB****Size 4****Installation with CLIP**

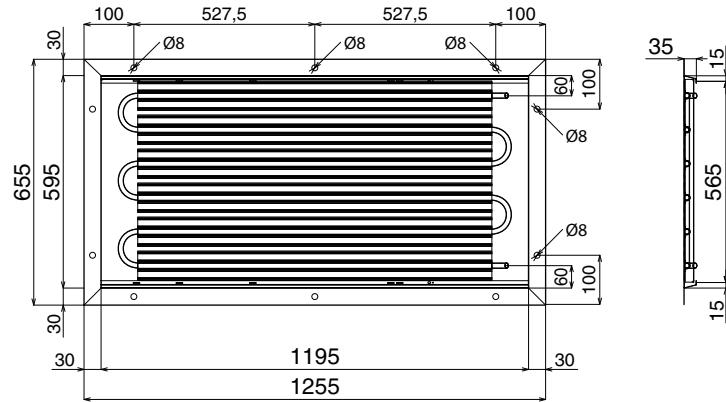
VERSION	SIZE	MODEL	CODE	LENGTH (mm)	HANGING BRACKETS (mm) WITH CLIP:		WEIGHT (kg)	WATER CONTENT (l)
					A	B		
WB.IX	1	WB.IX 1	0086271	1234	197	840	12,9	1,0
	2	WB.IX 2	0086272	1858	197	1464	19,4	1,5
	3	WB.IX 3	0086273	2482	445	1592	25,8	2,0
	4	WB.IX 4	0086274	3106	595	1916	32,3	2,5

Pulsar R.IX for plasterboard ceilings

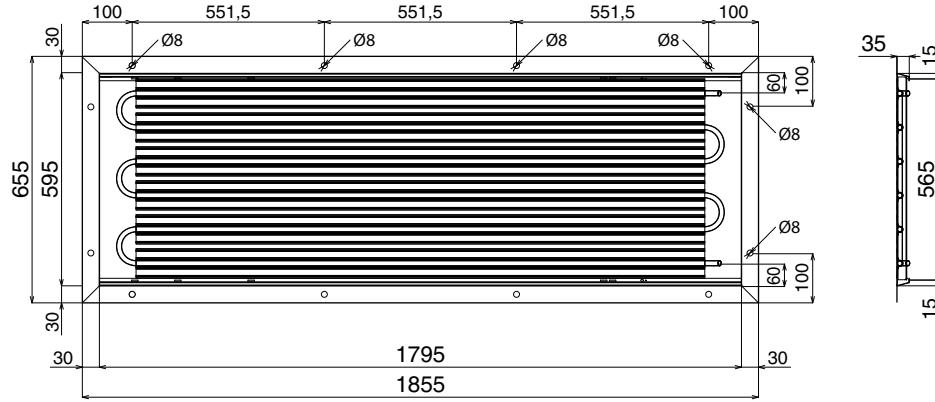
Weights and Dimensions

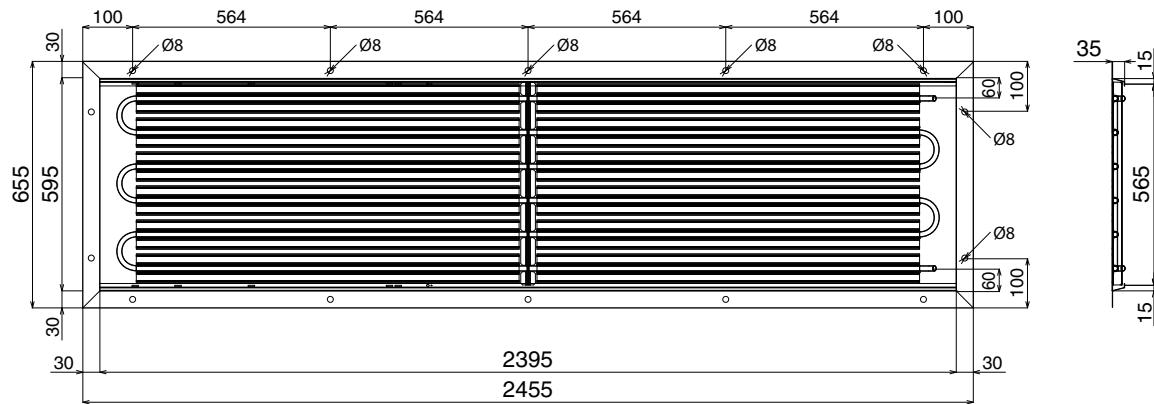
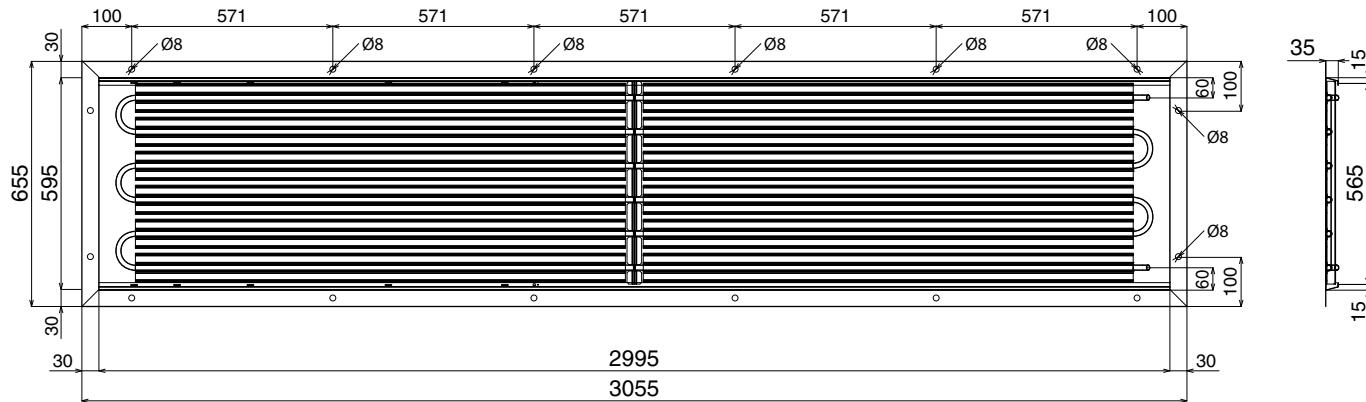
Pulsar R STANDARD

Size 1



Size 2



Pulsar R.IX for plasterboard ceilings**Weights and Dimensions****Pulsar R STANDARD****Size 3****Size 4**

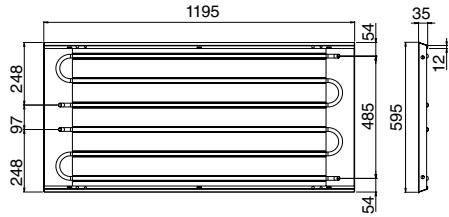
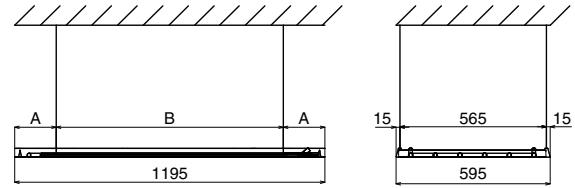
VERSION	SIZE	MODEL	CODE	LENGTH (mm)	WEIGHT (kg)	WATER CONTENT (l)
R.IX	1	R.IX 1	0086041	1255	14,0	1,0
	2	R.IX 2	0086042	1855	21,0	1,5
	3	R.IX 3	0086043	2455	27,9	2,0
	4	R.IX 4	0086044	3055	34,9	2,5

Pulsar PS.IX installed within false ceilings

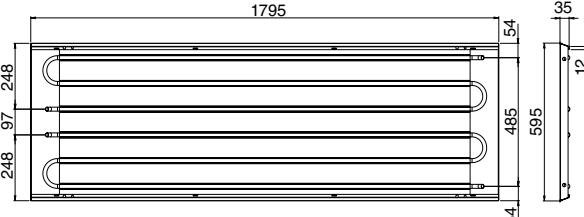
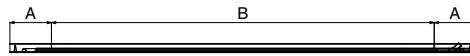
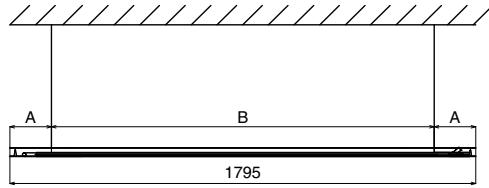
Weights and Dimensions

Pulsar PS

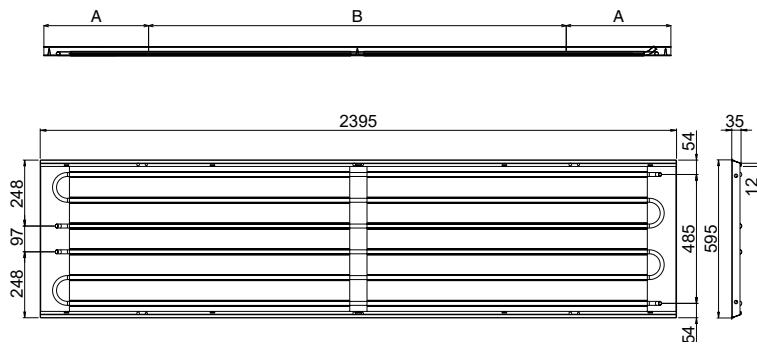
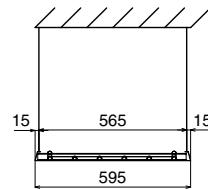
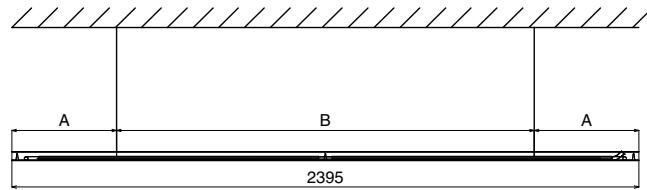
Size 1

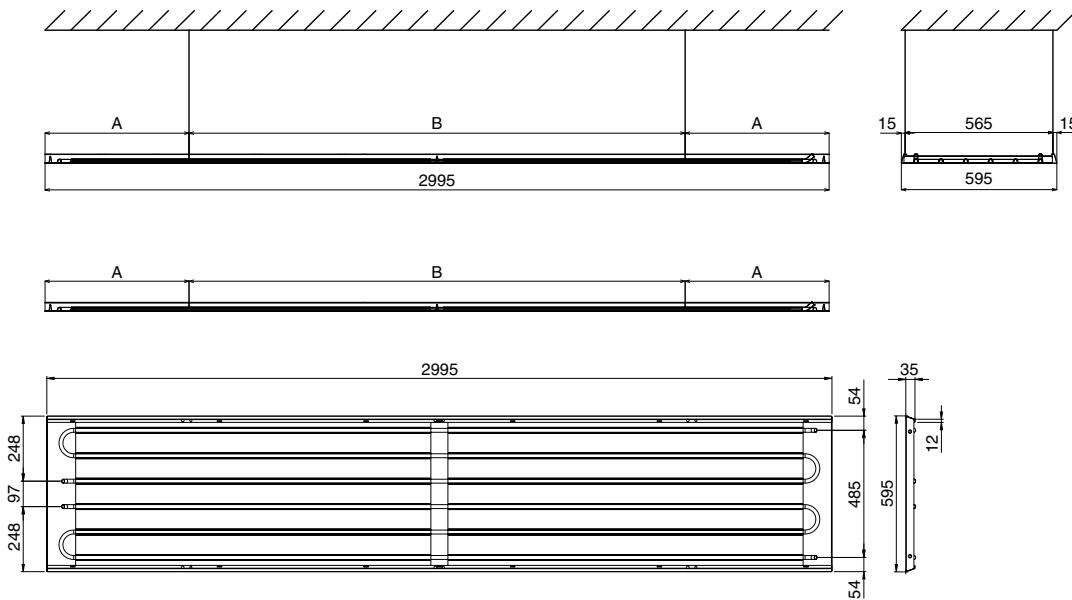
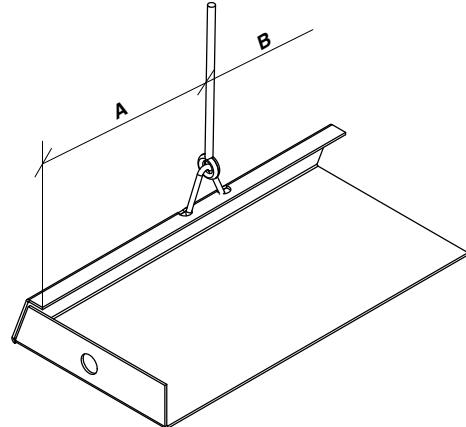


Size 2



Size 3



Pulsar PS.IX installed within false ceilings**Weights and Dimensions****Pulsar PS****Size 4****Installation with CLIP**

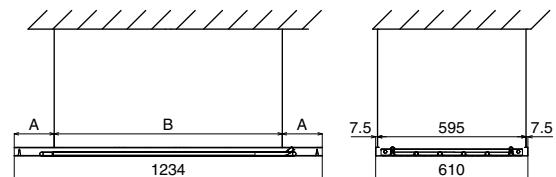
VERSION	SIZE	MODEL	CODE	LENGTH (mm)	INSTALLATION (mm) WITH CLIP:		WEIGHT (kg)	WATER CONTENT (l)
					A	B		
PS.IX	1	PS.IX 1	0086501	1195	145	905	12,9	1,0
	2	PS.IX 2	0086502	1795	145	1505	19,4	1,5
	3	PS.IX 3	0086503	2395	385	1625	25,8	2,0
	4	PS.IX 4	0086504	2995	535	1925	32,3	2,5

Pulsar WS.IX free hanging

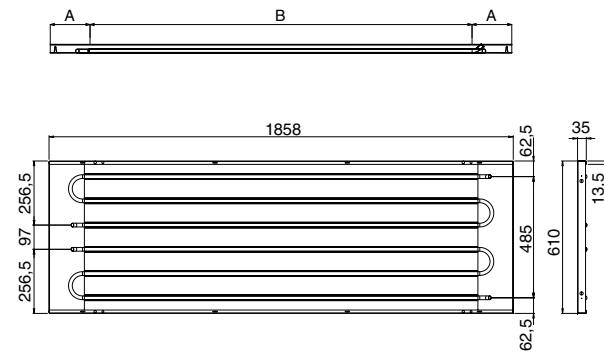
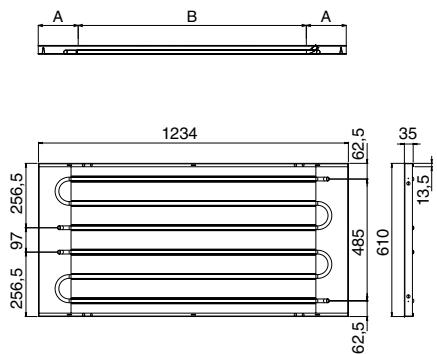
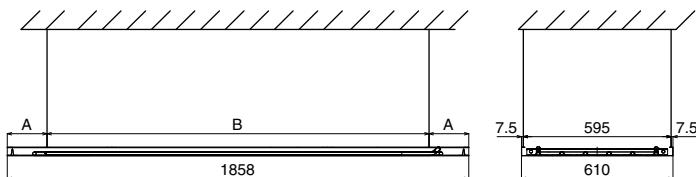
Weights and Dimensions

Pulsar WS

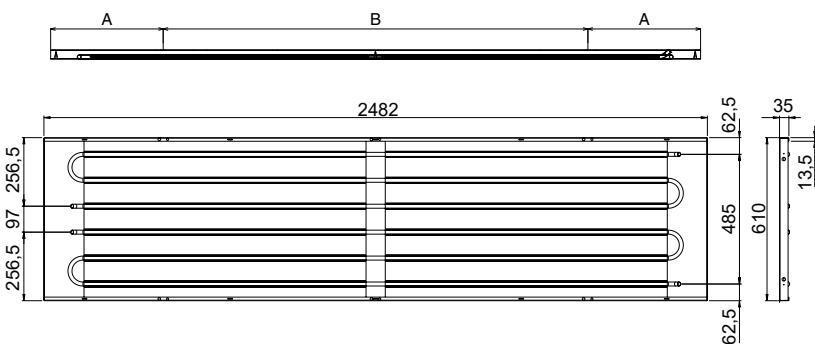
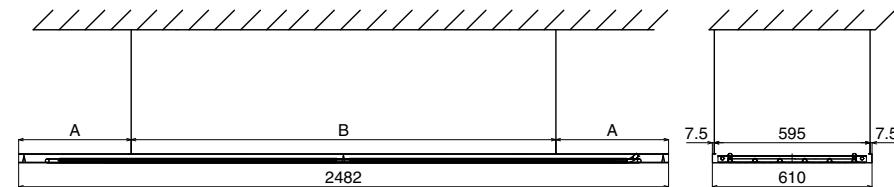
Size 1



Size 2



Size 3

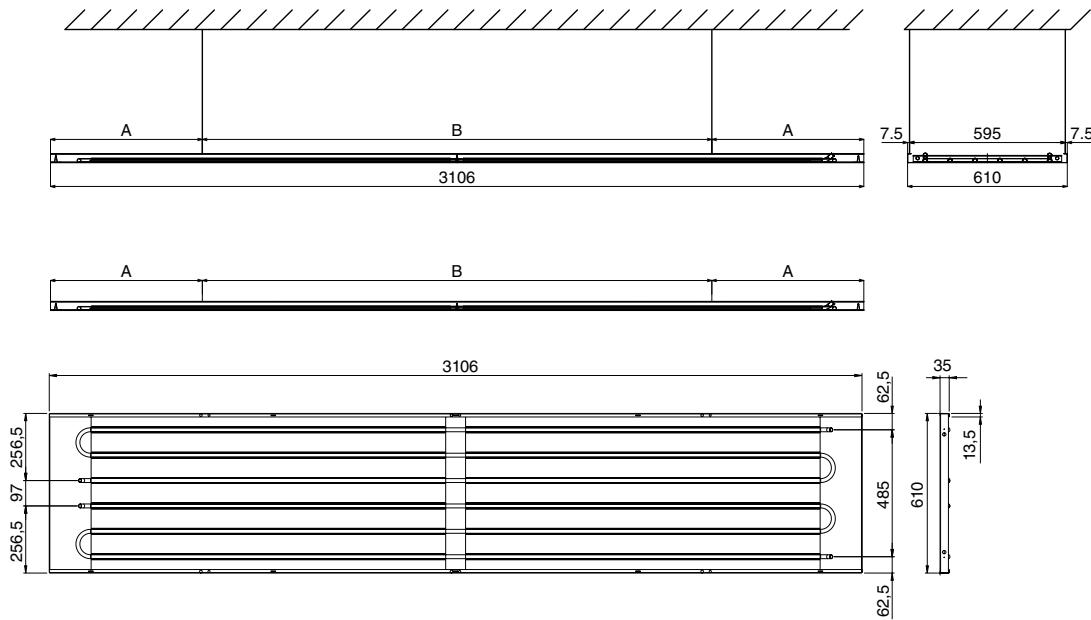


Pulsar WS.IX free hanging

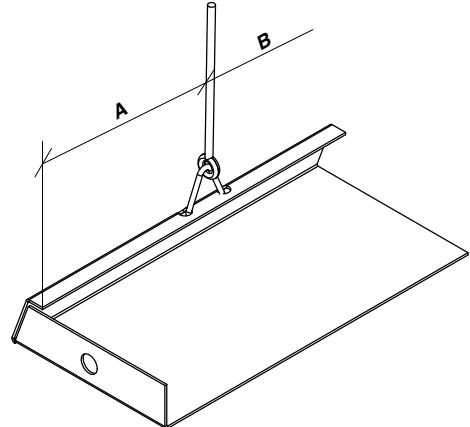
Weights and Dimensions

Pulsar WS

Size 4



Installation with CLIP



VERSION	SIZE	MODEL	CODE	LENGTH (mm)	INSTALLATION (mm) WITH CLIP:		WEIGHT (kg)	WATER CONTENT (l)
					A	B		
WS.IX	1	WS.IX 1	0086511	1234	197	840	12,9	1,0
	2	WS.IX 2	0086512	1858	197	1464	19,4	1,5
	3	WS.IX 3	0086513	2482	445	1592	25,8	2,0
	4	WS.IX 4	0086514	3106	595	1916	32,3	2,5

Emission

Characteristic curve of the **Pulsar** taken from tests carried out as per the EN 14037 standard:

$$Q = K \cdot (\Delta Tm)^n$$

Q = emission W/m

K = heating coefficient of the unit = 3,28086 W/m

ΔTm = difference between the mean water temperature and the room temperature

n = heating exponent of the unit = 1,1536

The emission of the Sabiana **Pulsar** radiant panels has been certified
by the laboratory at the University of Stuttgart H.L.K.

applying the harmonised European Standard EN 14037, with the report number DC210 D12.2956

Example:

Nominal emission for a meter of Pulsar panels with $\Delta Tm = 55^{\circ}\text{C}$: 334 W/m

Total nominal emission of Pulsar panels with $\Delta Tm = 55^{\circ}\text{C}$

Pulsar 1	Pulsar 2	Pulsar 3	Pulsar 4
W = 396	W = 596	W = 797	W = 997



EN 14037

Ceiling
radiant panels

Pulsar thermal emissions in accordance with the European Standard EN 14037-1

ΔTm	Emission								
°C	W/m								
89	582	75	478	61	376	47	279	33	185
88	574	74	470	60	369	46	272	32	179
87	567	73	463	59	362	45	265	31	172
86	559	72	456	58	355	44	258	30	166
85	552	71	448	57	348	43	251	29	160
84	544	70	441	56	341	42	245	28	153
83	537	69	434	55	334	41	238	27	147
82	529	68	427	54	327	40	231	26	141
81	522	67	419	53	320	39	225	25	134
80	515	66	412	52	313	38	218	24	128
79	507	65	405	51	306	37	211	23	122
78	500	64	398	50	299	36	205	22	116
77	492	63	391	49	292	35	198	21	110
76	485	62	383	48	285	34	192	20	104

Δtm = difference between the average water temperature and the room temperature.

Pulsar cooling emissions in accordance with the European Standard EN 14037-4

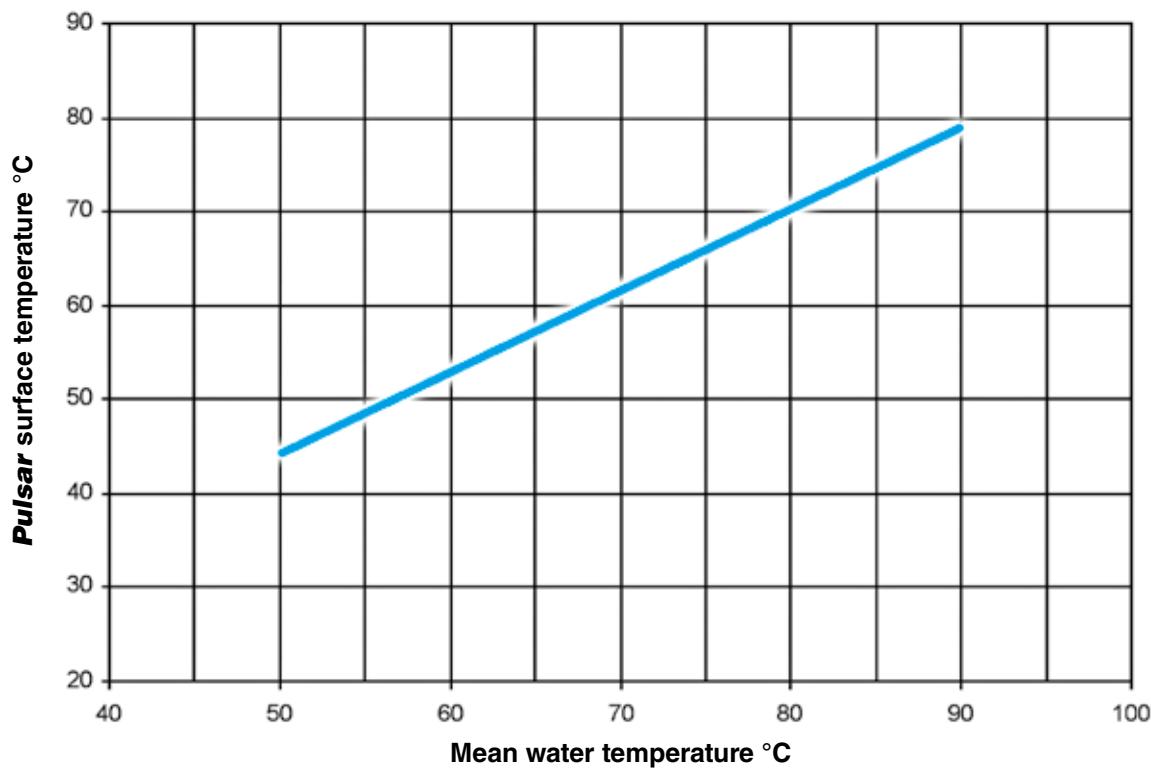
Δtm	COOLING EMISSION			
	With insulation		Without insulation	
°C	W/m	W/m ²	W/m	W/m ²
5	24	40	33	56
6	29	49	40	68
7	35	58	48	80
8	40	68	55	92
9	46	77	62	105
10	52	87	70	118
11	57	96	78	130
12	63	106	85	143
13	69	116	93	156
14	75	126	101	169
15	81	136	108	182

Δtm = difference between the average water temperature and the room temperature.

Example:

Water temperature 17/21°C,
air temperature 28°C - 50%
means $\Delta tm = 9^\circ\text{C}$.

The cooling emission
of the **Pulsar** is 46 W/m.

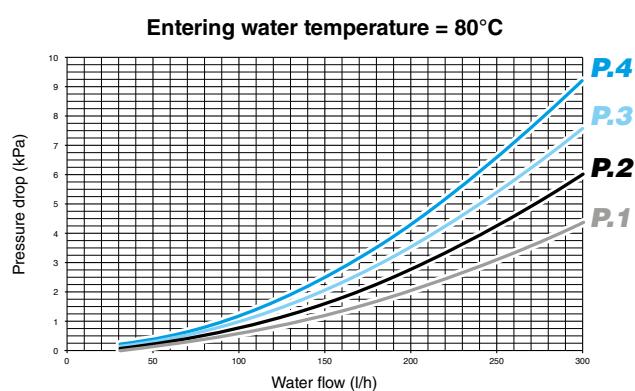
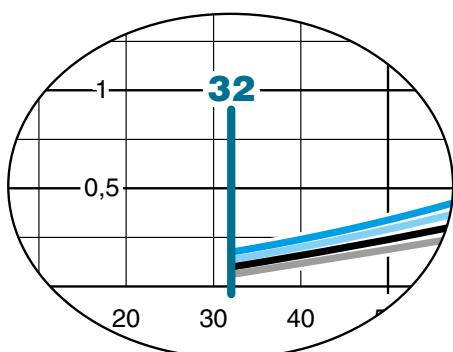
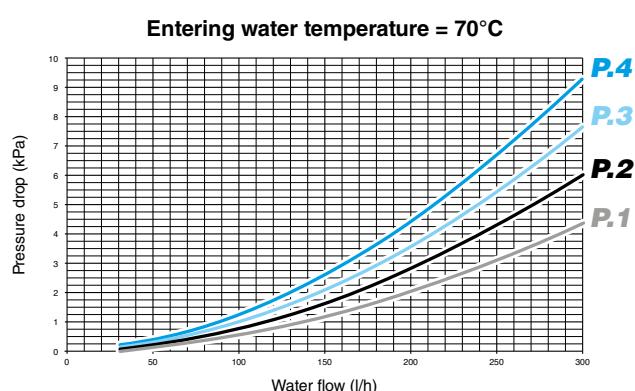
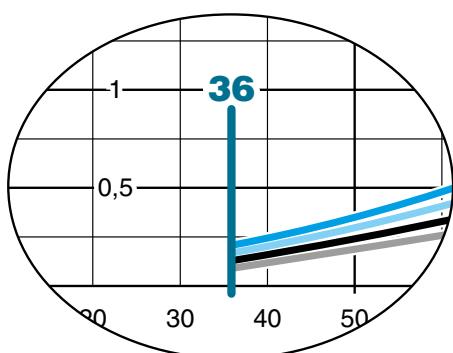
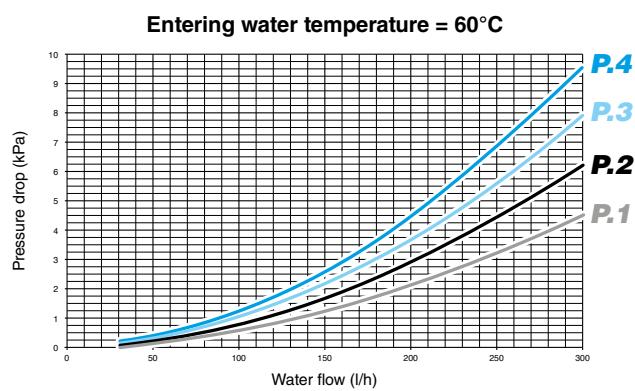
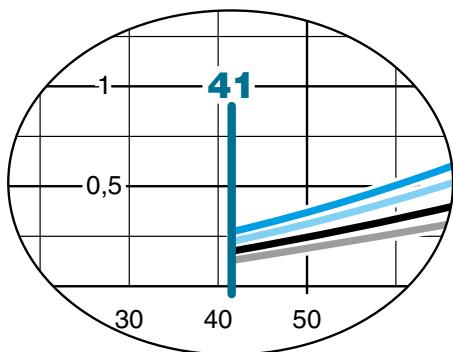
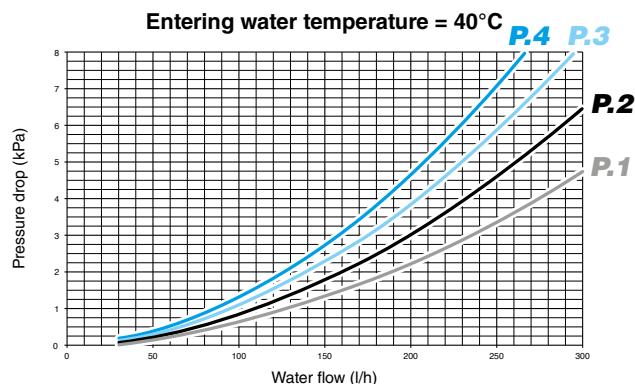
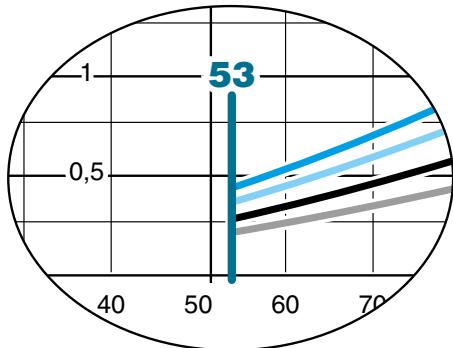
Mean surface temperature

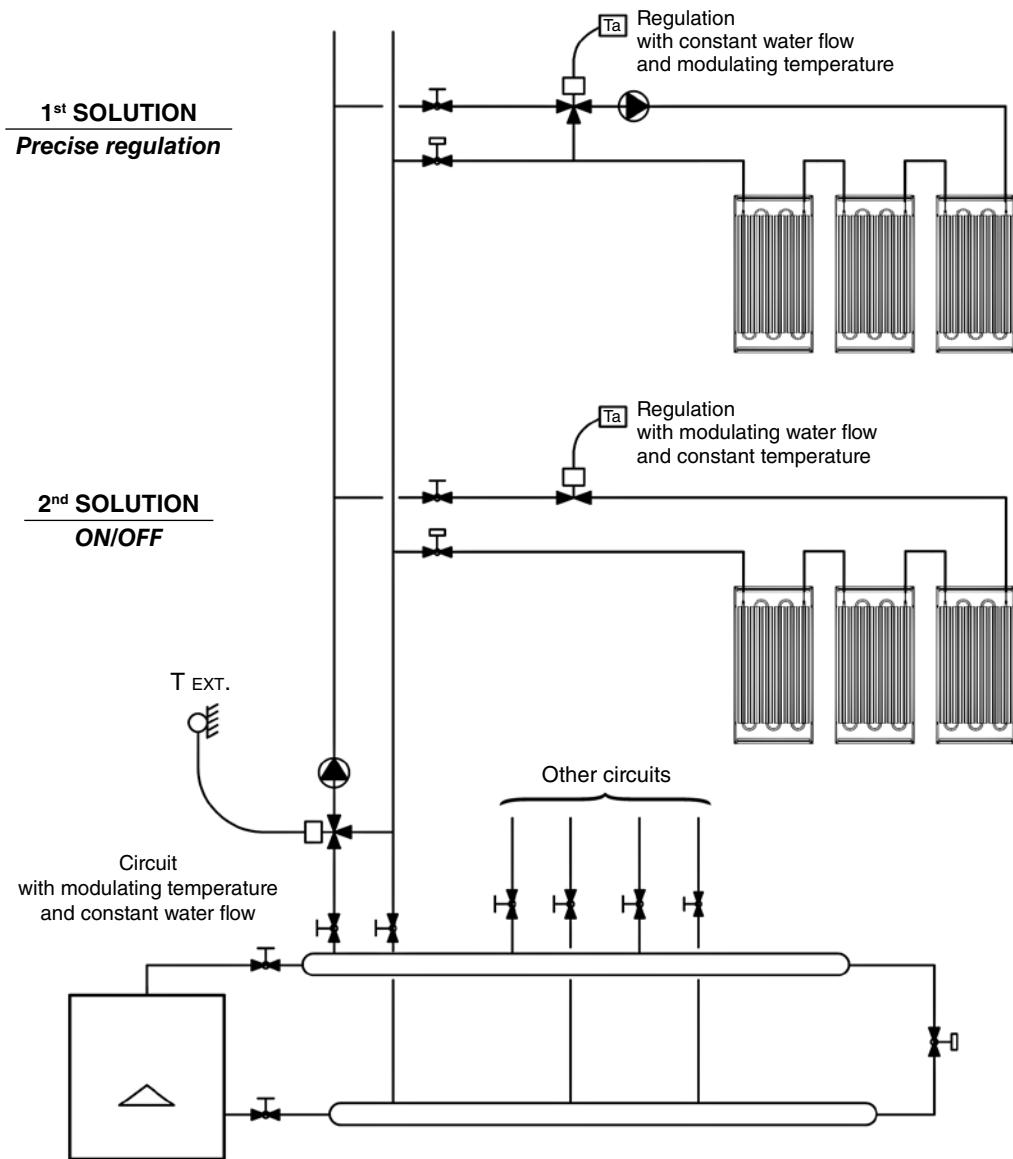
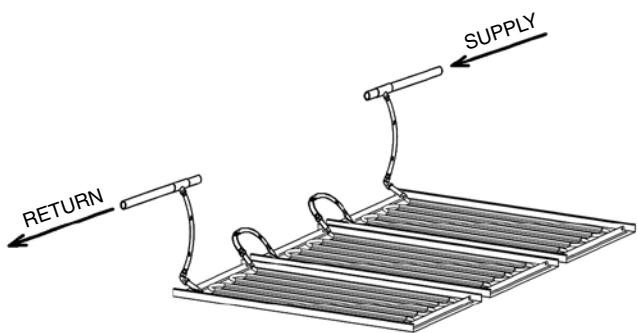
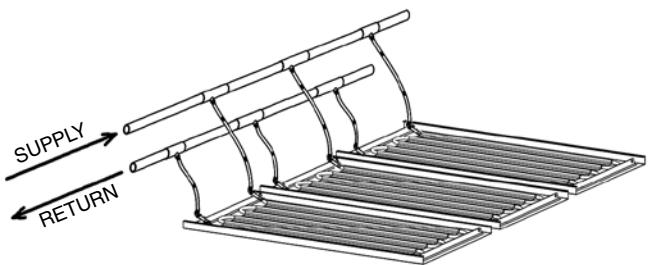
Lowest water flow

Lowest water flow to be supplied in order to obtain the correct emission.

Leaving water temperature °C	40	60	70	80
Lowest water flow l/h	53	41	36	32

Pressure drop



**Connection in series****Connection in parallel**

Operating limits

Water circuit	Maximum entering water temperature: +90°C
	Maximum operating pressure: 8 bars

Suggested lowest installation height

Maximum water temperature °C	m	<i>(in m above the floor)</i>
50	2,5	
60	2,7	
70	2,9	
80	3,1	
90	3,3	

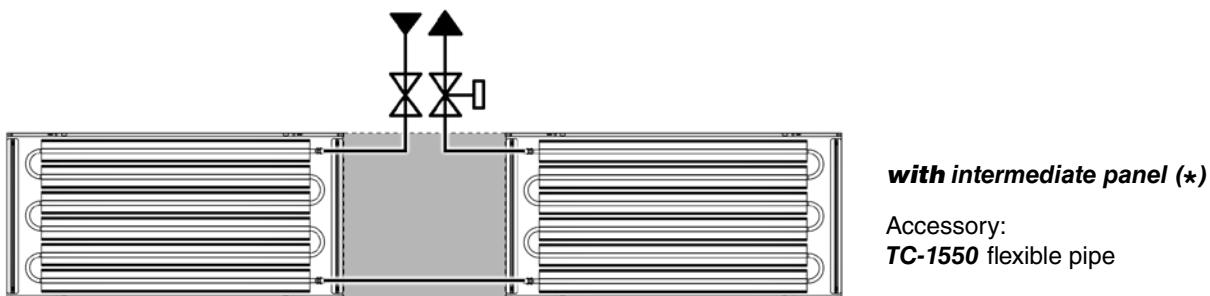
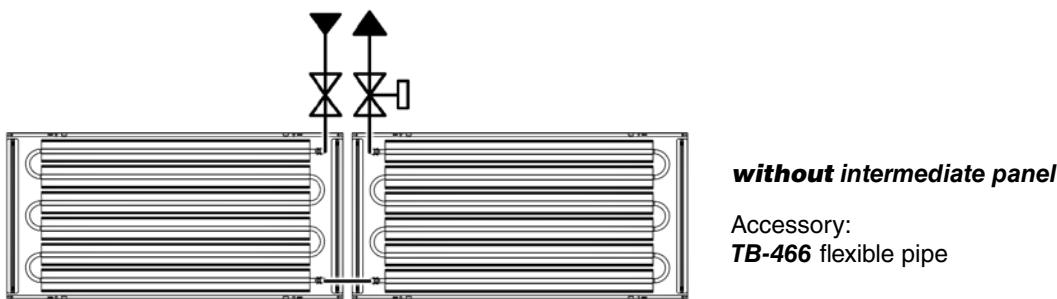
Table of possible combinations

P MODEL		
Total length (m)	Composition without intermediate panel	Composition with intermediate panel (*)
1,20	P.1	-
1,80	P.2	-
2,40	P.3	-
3,00	P.4	P.1 + Panel 600 x 600 (mm) + P.1
3,60	2 x P.2	-
4,20	P.2 + P.3	P.2 + Panel 600 x 600 (mm) + P.2
4,80	2 x P.3	-
5,40	P.3 + P.4 or 3 x P.2	P.3 + Panel 600 x 600 (mm) + P.3
6,00	2 x P.4	-
6,60	2 x P.3 + 1 x P.2	P.4 + Panel 600 x 600 (mm) + P.4
7,20	3 x P.3	-
8,40	2 x P.4 + 1 x P.3	P.3 + Panel 600 x 600 (mm) + P.3 + 600 x 600 (mm) + P.3
9,00	3 x P.4	-

W MODEL		
Total length (m)	Composition without intermediate panel	Composition with intermediate panel (*)
1,20	W.1	-
1,80	W.2	-
2,40	W.3	-
3,00	W.4	W.1 + Panel 600 x 600 (mm) + W.1
3,60	2 x W.2	-
4,20	W.2 + W.3	W.2 + Panel 600 x 600 (mm) + W.2
4,80	2 x W.3	-
5,40	W.3 + W.4 or 3 x W.2	W.3 + Panel 600 x 600 (mm) + W.3
6,00	2 x W.4	-
6,60	2 x W.3 + 1 x W.2	W.4 + Panel 600 x 600 (mm) + W.4
7,20	3 x W.3	-
8,40	2 x W.4 + 1 x W.3	W.3 + Panel 600 x 600 (mm) + W.3 + Panel 600 x 600 (mm) + W.3
9,00	3 x W.4	-

Longer length possible according to suitable Δp

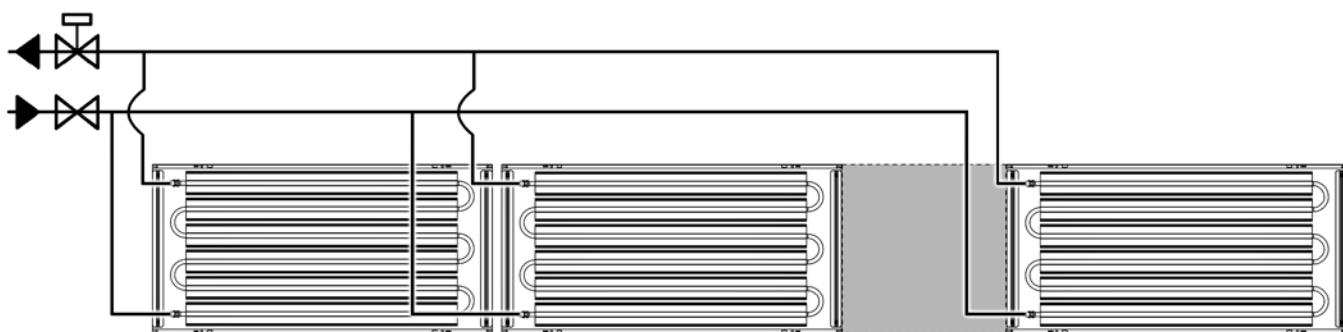
Connection in series



Connection in parallel

with or without intermediate panel (*)

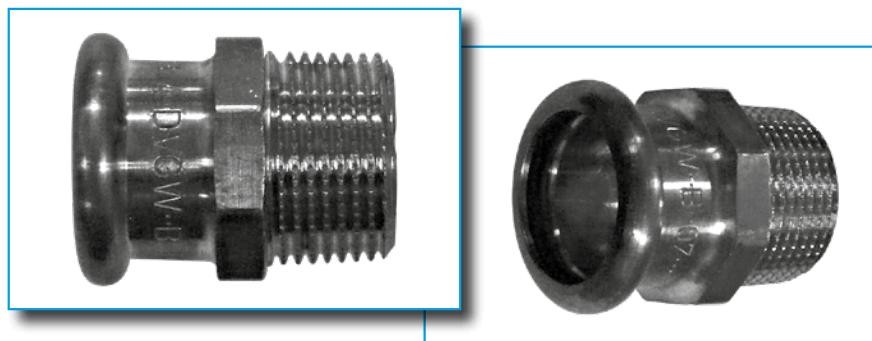
(⚠ lower water flow for panel)



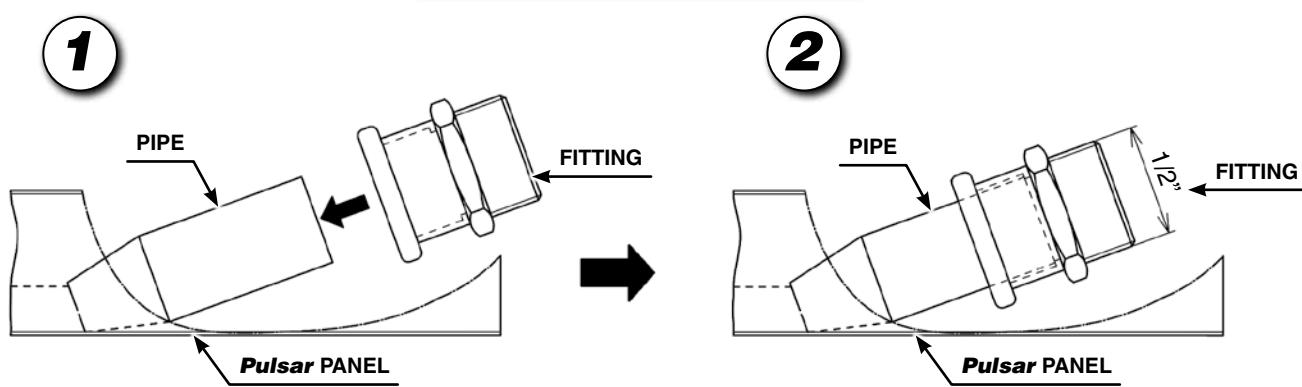
(*) This may be a false ceiling panel, a light or one of the **Pulsar** non-active aesthetic panels

FITTINGS (suitable for use up to 8 bars)

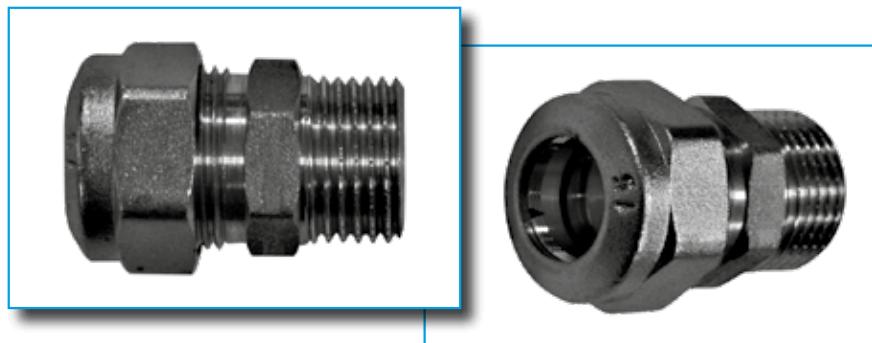
Pressfittings (GEBERIT)



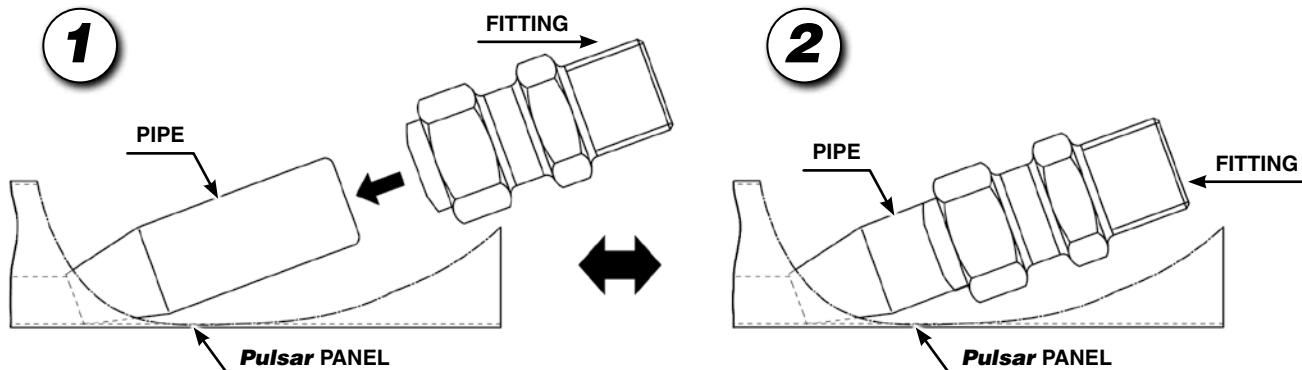
Code 9084407



Screw fittings (CALEFFI) - Torque: 25 Nm - Black O-ring only



Code 9084408



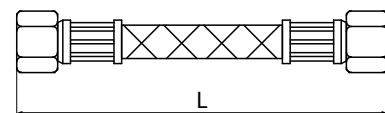
NOTE: two kits of fittings must be used
for **PA, PB, WA** and **WB** panels (1 kit = 2 fittings).

Flexible pipe compliant with CSTB standard

- Diameter 1/2"
- Made of: EPDM rubber
- With external AISI 304 stainless steel layer
- Operation between -15 °C and +90 °C
- Suitable for use up to 8 bar
- Torque of 15-20 Nm

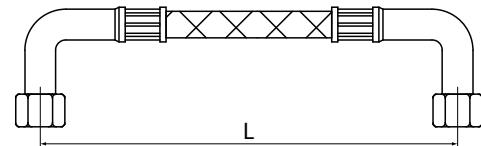
Straight flexible pipe - 1/2" female fittings

Flexible pipe length (mm)	Identification	Code	L (mm)
350	TA-370	6084010	375



90° flexible pipe - 1/2" female fittings

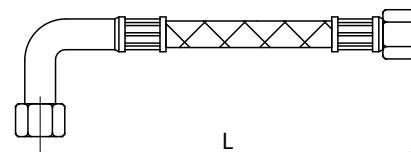
Flexible pipe length (mm)	Identification	Code	L (mm)
350	TB-466	6084011	485



90° / Straight flexible pipe - 1/2" female fittings

Flexible pipe length (mm)	Identification	Code	L (mm)
850	TC-950	6084012	985
1200	TC-1300	6084013	1300
1450	TC-1550	6084014	1540
2000	TC-2100	6084015	2120

For panels in series

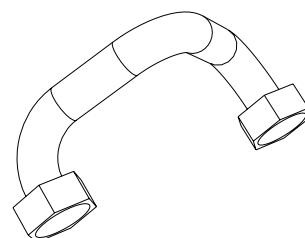


NOTE: all codes refer to the single pipe.

PS/WS pipe fitting

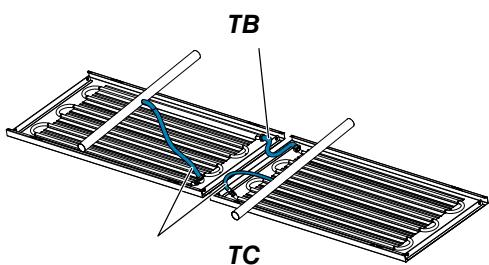
Copper pipe - 1/2" female fittings

Identification	Code
RS-100	6084017

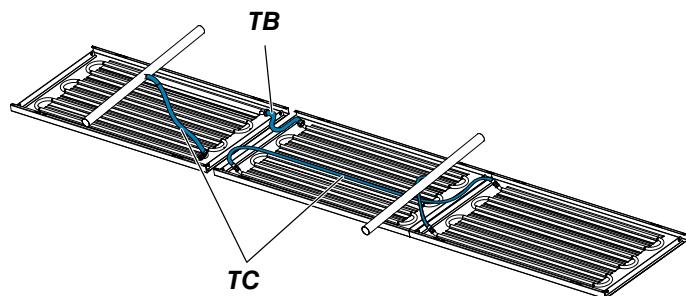


Assembly examples on the next page.

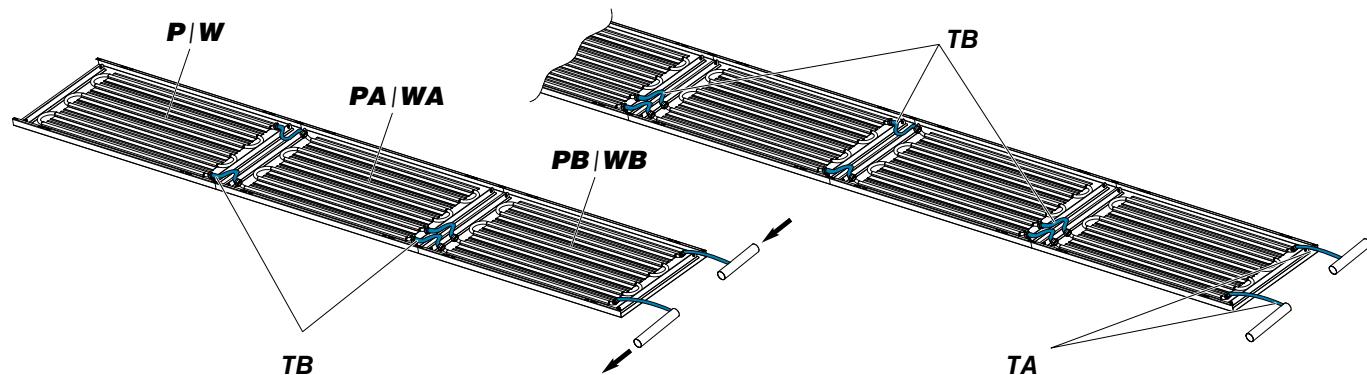
Assembly of 2 Standard panels



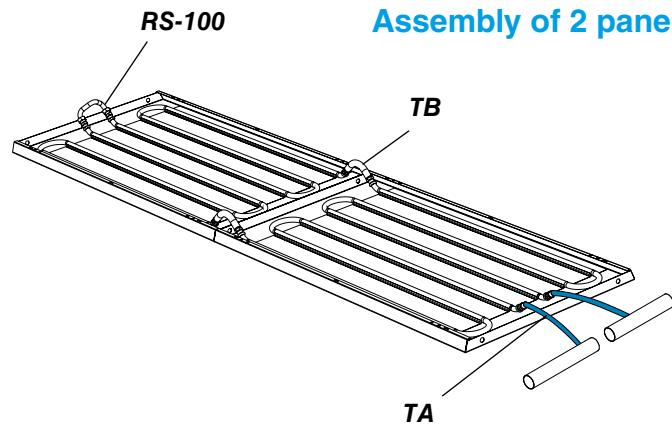
**Assembly of 3 Standard panels
(for connections up to 2 m)**



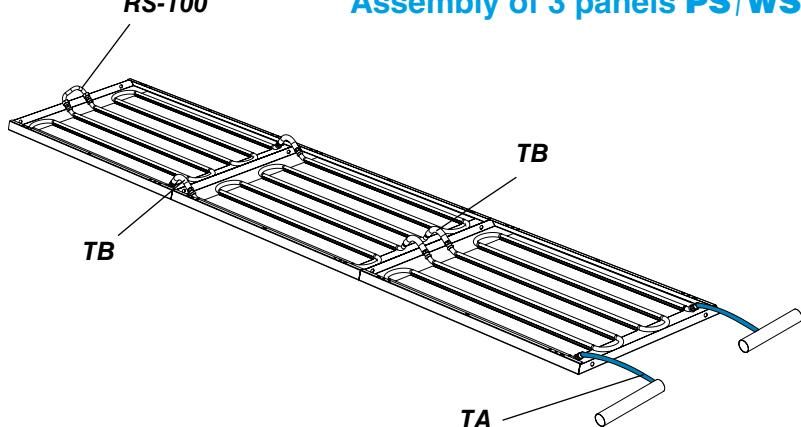
**Assembly of 3 panels
PA/WA and PB/WB**



Assembly of 2 panels PS/WS

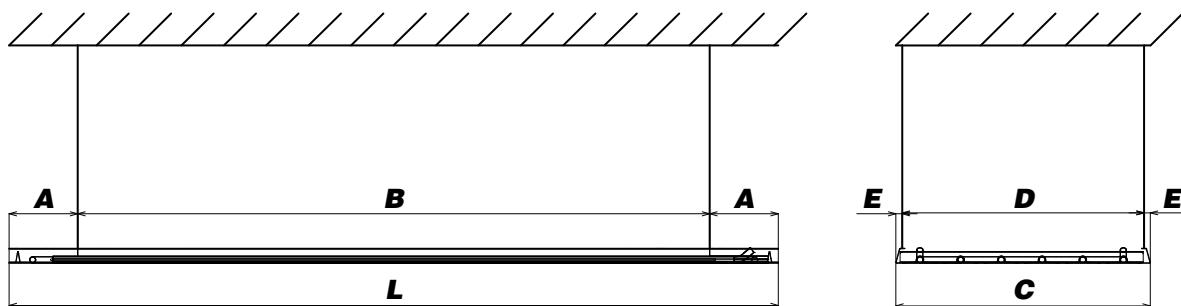


Assembly of 3 panels PS/WS



Hanging brackets

Versions **P** and **W**



MODEL	WITH CLIP					
	L (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
P.1	1195	145	905	595	565	15
P.2	1795	145	1505	595	565	15
P.3	2395	385	1625	595	565	15
P.4	2995	535	1925	595	565	15
W.1	1234	197	840	610	595	7,5
W.2	1858	197	1464	610	595	7,5
W.3	2482	445	1592	610	595	7,5
W.4	3106	595	1916	610	595	7,5

The maximum vertical bending f of the Pulsar radiant panels between two suspension points is less than 2 mm.

Suspension kits

Installation with CLIP

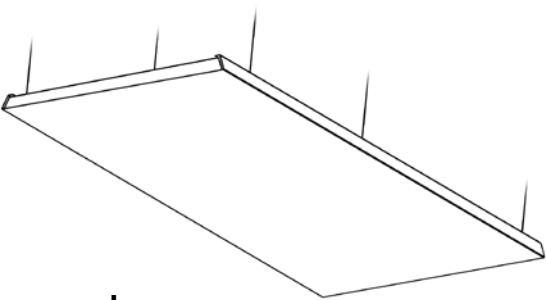
KIT KIT-A	CODE 9084411	KIT KIT-T	CODE 9084412	KIT KIT-TM	CODE 9084413	WIRE LENGTH (m) 1 2			
						KIT KIT-TC1	CODE 9084414		
						KIT KIT-TC2	CODE 9084415		
						WIRE LENGTH (m) 1 2	KIT KIT-C1	CODE 9084416	
								KIT KIT-C2	CODE 9084417

The aesthetic panels are used when the active panels do not need to be installed and when, for aesthetic reasons or local specifications, a non-active panel has to be installed to complete a strip.

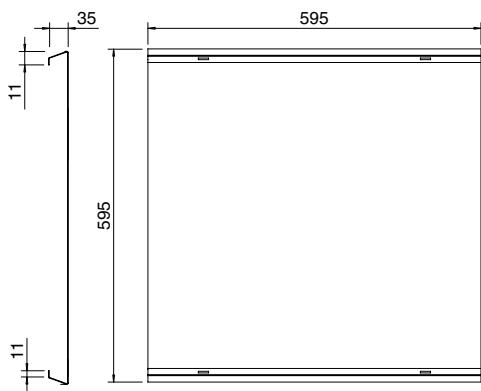
Available in 2 models:

LENGTH (mm)	CODE
595	9084420
1195	9084421

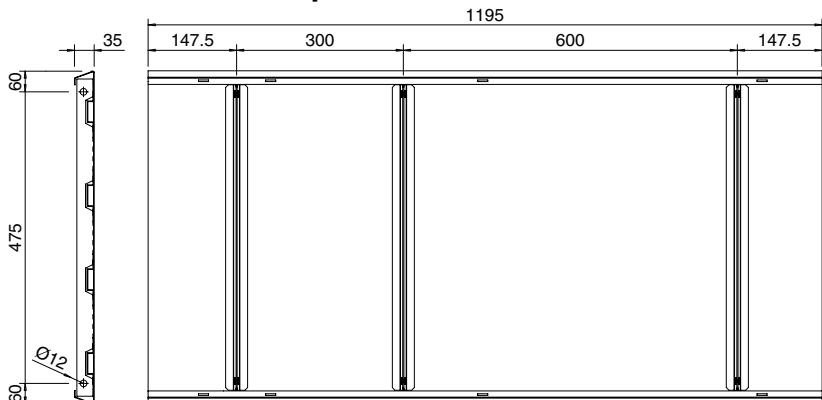
Can be cut to measure on site.



600 non-active panel



1200 non-active panel



Hanging holes on the lateral sides of the panel.

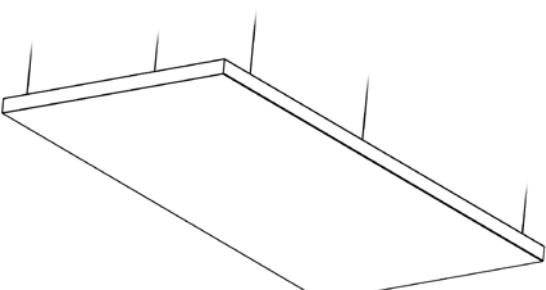
Non-active aesthetic panel - Version W

The aesthetic panels are used when the active panels do not need to be installed and when, for aesthetic reasons or local specifications, a non-active panel has to be installed to complete a strip.

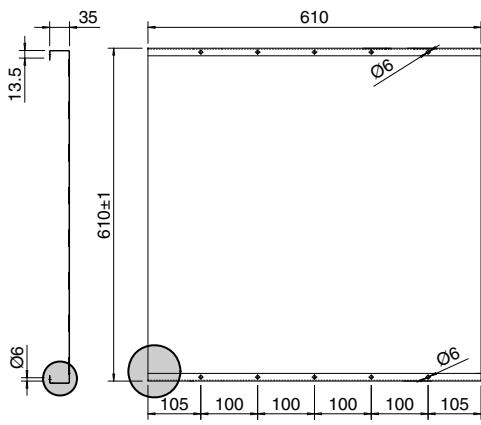
Available in 2 models:

LENGTH (mm)	CODE
610	9084430
1234	9084431

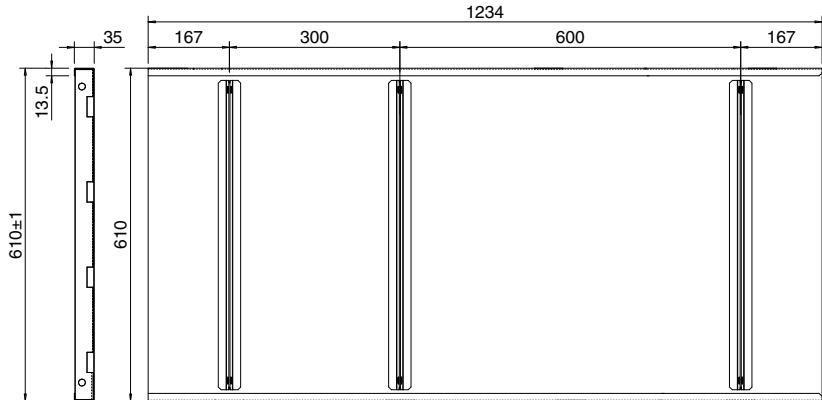
Can be cut to measure on site.



600 non-active panel



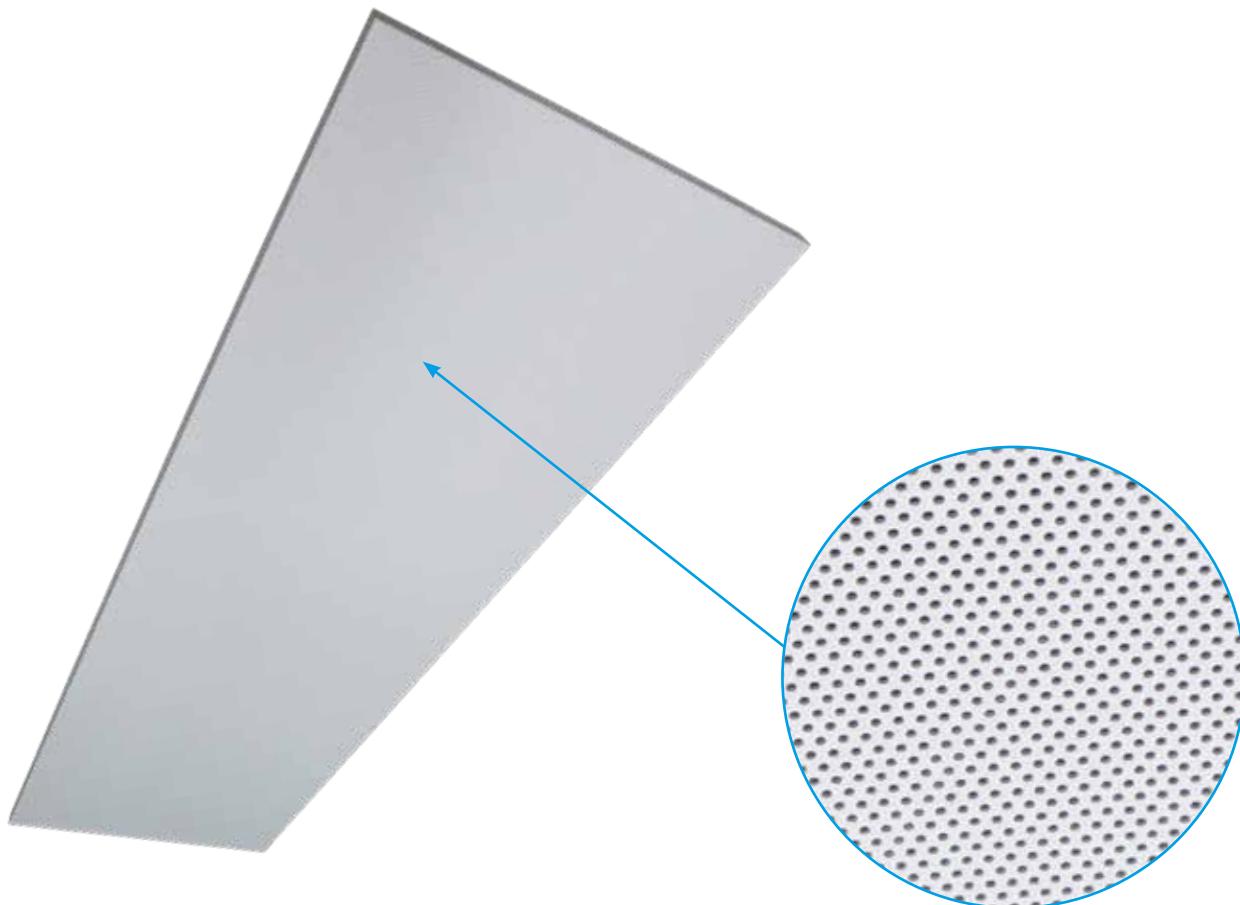
1200 non-active panel



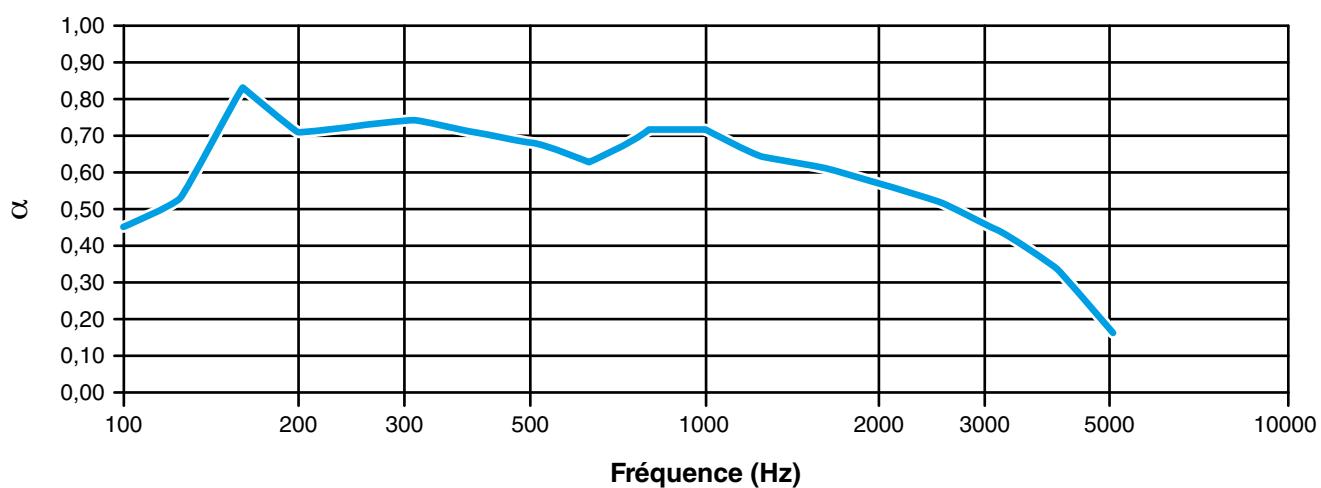
Hanging holes on the lateral sides of the panel.

Special version with perforated panel: it is supplied with extra thermal acoustic insulation, which allows the attenuation of noise reverberation in the room.

Weights and dimensions like **Standard panel**.



Sound absorption coefficient



α = Sound absorption coefficients

**CSM TUBE**

CSM TUBE spa
Via del Lavoro, 60
31013 Cimavilla di Codognè (TV) ITALY
Phone +39 0438 471 100
Fax +39 0438 470 606

Cap. Soc. € 1.000.000,00 i.v.
R.E.A. TV N. 212725 - Reg. Impr. 02478770262
C.F. e P.IVA IT02478770262
info@csmtube.com
www.csmtube.com

**CSM GROUP**

Cimavilla di Codognè-Treviso-Italy

22/04/2020

PRESSURE TEST AND LEAK TIGHTNESS TEST ON HEAT TREATED TUBE IN COIL OD 15mm TH 0,8mm ALLOY EN 1.4512

CSMTUBE S.p.A. declare that the 100% of the Heat Treated Tubes in coil OD15mm Th.0,8mm alloy EN 1.4512 for costumer SABIANA are produced according to EN 10296-2 and pass the following tests in term of Leak Tightness:

- Automatic Non-destructive testing- Eddy current Method according to UNI EN ISO 10893-1: Part 1: Automated electromagnetic testing of welded steel tubes for the verification of hydraulic leaktightness.
- Underwater pressure test performed with 40bar air pressure inside the tube and carried out according to CSMTUBE Operative Instruction OP-019.

Luca Grespan
Quality Control Manager
CSMTUBE S.p.A.

Ai termini di legge CSM TUBE spa si riserva la proprietà di questo elaborato con divieto assoluto di riproduzione, di modifica e/o di divulgazione a terzi, anche solo parziale, senza specifica autorizzazione scritta della Direzione della stessa CSM TUBE spa



Organisme certificateur

**CERTIFICAT**

Flexibles de raccordement
 Flexibles de raccordement souples
LUX

Le CSTB atteste que le(s) produit(s) ci-dessus est (sont) conforme(s) à des caractéristiques décrites dans le référentiel de certification n° 19, après évaluation selon les modalités de contrôle définies dans ce référentiel.

Le CSTB accorde à :

La société LUXOR SPA
 Via Zanardelli 88
IT - 25013 CARPENEDOLO (Brescia)
Usine de IT - 25013 CARPENEDOLO (Brescia)

le droit d'usage de la marque CSTBat Flexibles de raccordement pour le(s) produit(s) objet(s) de cette décision, pour toute sa durée de validité et dans les conditions prévues par les exigences générales de la marque CSTBat et le référentiel mentionné ci-dessus.

Décision de reconduction n° 273-07-1693 du 2 février 2012
 Cette décision annule et remplace la décision de reconduction
 n° 244-07-1058 du 13 avril 2011



Sauf retrait, suspension ou modification, ce certificat est valable jusqu'au 31/10/2016. La liste des certificats en cours de validité est tenue à jour et disponible sur le site Internet www.cstb.fr.

CARACTÉRISTIQUES CERTIFIÉES

Conformité à l'Avis Technique n°14/11-1693

Caractéristiques physiques et physico-chimiques de l'élastomère

- dureté
- résistance à la rupture
- allongement à la rupture
- déformation rémanente après compression
- variations de dureté et des caractéristiques en traction après vieillissement
- tenue à l'ozone

Caractéristiques mécaniques des produits finis

- résistance à la pression à 90°C, à 3 fois la pression maximale admissible
- résistance aux pressions cycliques à 5/50 bars à 90°C

Ce certificat comporte 1 page.

Correspondant

Philippe PEREIRA
 Tél. : 01 64 68 89 61
 Fax : 01 64 68 84 44

Pour le CSTB
 Pour le Directeur Technique

 Yannick LEMOIGNE



Quiconque présente ce certificat doit également produire *in extenso* l'Avis Technique correspondant.

CENTRE SCIENTIFIQUE ET TECHNIQUE DU BÂTIMENT
 SIÈGE SOCIAL > 84 AVENUE JEAN JAURÈS | CHAMPS-SUR-MARNE | 77447 MARNE-LA-VALLÉE CEDEX 2
 TÉL. (33) 01 64 68 82 82 | FAX. (33) 01 60 05 70 37 | www.cstb.fr
 MARNE-LA-VALLÉE | PARIS | GRENOBLE | NANTES | SOPHIA-ANTIPOLIS

Report nr. 12030MAL-06CA270
The results are referred to the unit indicated at page 1 only.



IMQ CLIMA Centro di Innovazione Tecnologica Agemont S.p.A.

Amaro, 18/12/2012

Test Report n° 12030MAL-06CA270 REVERBERATION ROOM Sound absorption

Date of reception of the unit: 23/11/2012
Date of test: 14/12/2012

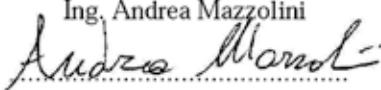
DATA OF THE TESTED UNIT

- Customer/manufacturer SABIANA S.p.A.
Via Piave, 53
20011 Corbetta (MI)
- Test unit: Ceiling panels PULSAR
- Mounting type: E-300

The tests are performed in compliance with the *EN ISO 354:2004 "Acoustics –Measurement of sound absorption in a reverberation room* and *EN ISO 11654:1997 "Sound absorbers for use in buildings" Rating for sound absorption*.

The results presented in this report are valid for the tested unit only.

Executed and approved by:

Technical Manager Ing. Andrea Mazzolini 

Note: This report consists of 9 pages.
The tested unit has been chosen by the customer/manufacturer.
Any reproduction of this report must contain all pages. The reproduction of this report must be authorised by IMQ CLIMA Centro di Innovazione Tecnologica Agemont S.p.A.

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Fax +39 0433-469042

pag. 1 of 9

Il presente documento annulla e sostituisce il certificato di
pnr numero emesso in data 08/05/2022.



CERTIFICATO N. 0545/8

SI CERTIFICA CHE IL SISTEMA DI GESTIONE PER LA QUALITÀ DI
WE HEREBY CERTIFY THAT THE QUALITY MANAGEMENT SYSTEM OPERATED BY

SABIANA S.P.A.

Sede e Unità Operativa

Via Piave, 53 - 20011 Corbetta (MI) – Italia

Processi direzionali, primari e di supporto relativamente a Progettazione, produzione e assistenza di apparecchiature per il riscaldamento e il condizionamento dell'aria (aerotermi, termostrisce radianti, ventilconvettori e unità trattamento aria) e canne fumarie.

Unità Operativa

Via Virgilio, 2 - 20013 Magenta (MI) – Italia

Produzione di ventilconvettori. Magazzino Logistica.

(Presente solo reparto produttivo, magazzino componenti e logistica: Magazzino P.F. e spedizione).

Via Zanella, 27 - 20011 Corbetta (MI) – Italia

Assemblaggio unità trattamento aria, lavorazioni meccaniche, saldatura, magazzino, assemblaggio recuperatori.

È CONFORME ALLA NORMA / IS IN COMPLIANCE WITH THE STANDARD

UNI EN ISO 9001:2015

Sistema di Gestione per la Qualità / Quality Management System

PER LE SEGUENTI ATTIVITÀ / FOR THE FOLLOWING ACTIVITIES

EA: 18

Progettazione, produzione e assistenza di apparecchiature per il riscaldamento e il condizionamento dell'aria (aerotermi, termostrisce radianti, ventilconvettori e unità trattamento aria) e canne fumarie.

Design, production and service of heating and air conditioning equipment (unit heaters, radiant panels, fan coil units and air handling units) and chimneys.

Riferiti alla documentazione del Sistema di Gestione per la Qualità aziendale per l'applicabilità dei requisiti della norma di riferimento.
Refer to the documentation of the Quality Management System for details of application to reference standard requirements.

Il presente certificato è soggetto al rispetto del documento ICIM "Regolamento per la certificazione dei sistemi di gestione" e al relativo Schema specifico. The use and the validity of this certificate shall satisfy the requirements of the ICIM document "Rules for the certification of company management systems" and specific Scheme.

Per informazioni puntuali e aggiornate cerca eventuali variazioni intervenute nello stato della certificazione di cui al presente certificato.

si prega di contattare il n° telefonico +39 02 725341 o indirizzo e-mail info@icim.it.

For finely and updated information about any changes in the certification status referred to in this certificate,
please contact the number +39 02 725341 or email address info@icim.it.

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10/06/1996

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CURRENT ISSUE
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DATA DI SCADENZA
EXPIRING DATE
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Vincenzo Delacqua
Rappresentante Direzione / Management Representative
ICIM S.p.A.
Piazza Don Enrico Mapelli, 75 – 20099 Sesto San Giovanni (MI)
www.icim.it



0449CM_03_IT

SGO N° 064A



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ARBONIA

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www.sabiana.it



Cert. n. 0545



Cert. n. 050153

Operative unit
via Virgilio 2, Magenta-MI Italia