PHASED OUT

Lindab **Polaris S**

Supply air beam

Supply air beam Polaris S

PHASED OUT

Use

Lindab's supply air beam Polaris S has a large cooling capacity, uses one-way air injection and can therefore be used to advantage in rooms with small spaces and substantial cooling requirements.

In terms of appearance, Polaris S in width 60 looks similar to Polaris I and Professor. Polaris/Professor can therefore be used alternately in the same room to provide an architectonic uniform appearance in the room. Polaris S is equipped with divergent nozzles, which results in a draft-free indoor climate.

Polaris S can be used for cooling, heating and ventilation. Polaris S can be provided with the following features DrypacTM condensation protection, Regula Secura condensation guard, built-in valves and actuators, built-in exhaust air valve, etc. The product offers many possibilities and great flexibility.

Installation

Polaris S is available for integrated installation. Polaris S is installed as an integral part of a suspended ceiling, where the beam is mounted on a standard T-support. Polaris S can be supplied with horizontal and vertical connections.

Worth noting

Polaris S is equipped with a large cooling battery, in one side of the beam, which provides a large cooling capacity through one-way air injection.

Lindabs active chilled beams are Eurovent-certified and tested according to EN-15116.

Key figures

Length:	1200 - 3600 mm (steps of 100 mm)
Width:	300, 600 mm (ceiling adaption available)
Height:	230 mm
Capacity:	1650 W

Calculation setup
Room temp: 25°C, Water temp: 14-17°C, Air temp: 18°C, Nozzle air pressure: 80 Pa, Air flow: 15 l/s/m

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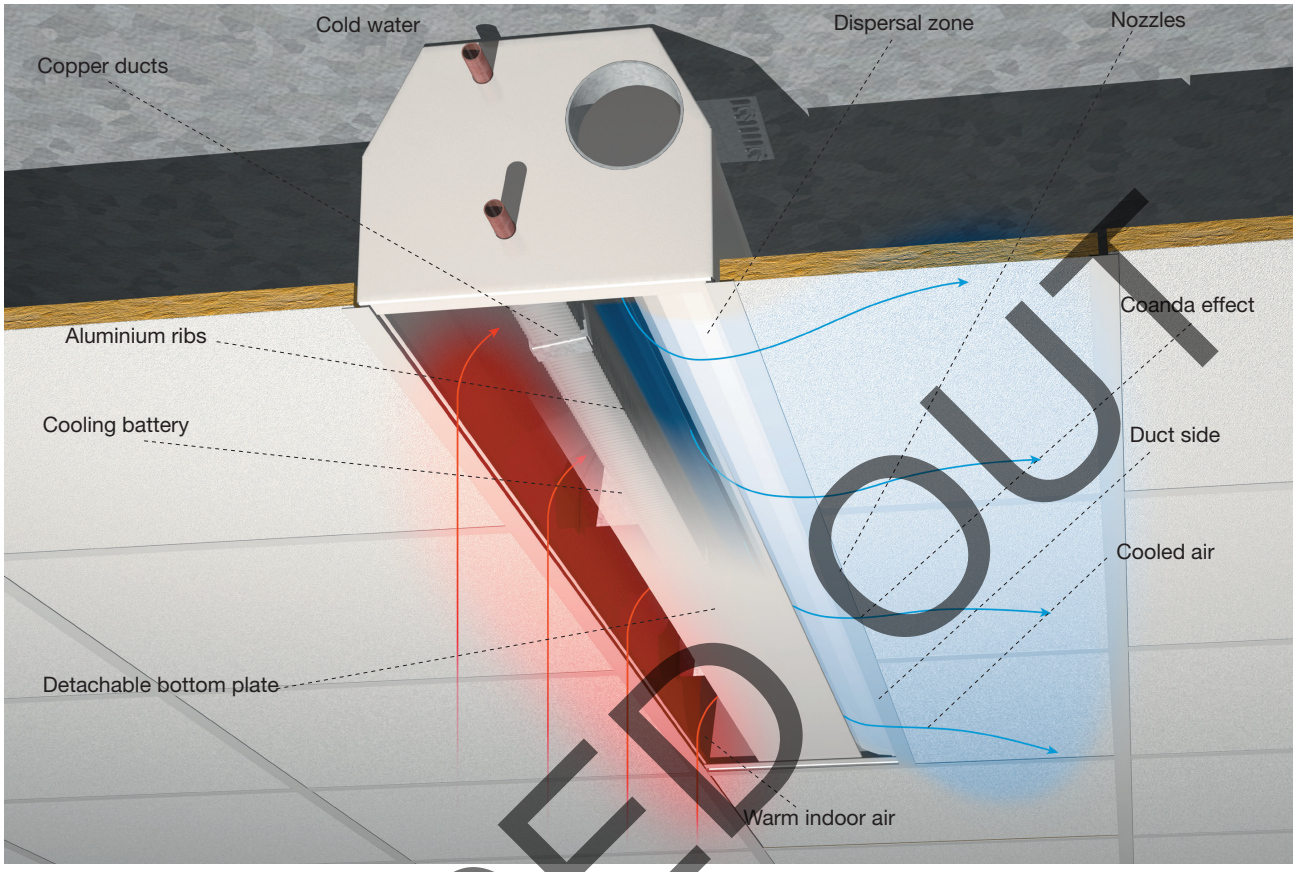

Picture 1. Polaris S is based on the induction principle.

Function

Powerful function with one-way air distribution

Lindab's supply air beam, Polaris S, is based on the induction principle (see picture 1). Ventilation air with a certain dynamic pressure is released through specially formed nozzles into a dispersal zone, thereby creating a low static pressure. This low pressure causes warm air from the room to be sucked into the ventilation air passing through the battery. The volume of warm indoor air is 4 to 5 times that of the ventilation air. The air is cooled as it passes through the battery, which consists of aluminium ribs with copper pipes filled with cold running water. The heat of the room is absorbed through the aluminium ribs and then transferred through the copper pipe into the water circuit and then on to a central cooling unit. Despite the small external dimensions of the product, the construction makes it possible to achieve a high cooling capacity.

The nozzles releasing the ventilation air are designed to maintain the Coanda effect, i.e. the adhesive capacity of the air in the duct, in the nozzles. The air then follows the side of the duct on to the ceiling. The side of the beam is shaped so as to transfer the Coanda effect to the ceiling of the room. If both heating and cooling are required, there is an extra pipe in the battery, which heats the room.

Hygiene

Accessibility from below

The requirement for all parts of the beam to be easy to clean is met by the removable bottom (see picture 3). The vertical battery is accessible from three sides and thus can be cleaned thoroughly. The same applies to the Coanda nozzles, which can easily be cleaned from below. Where the beam is equipped with built-in valves and control devices, these are also accessible from below. The air duct is cleaned through the removable cleaning hatch in the end-piece of the product (see picture 4). All of this allows thorough cleaning of the product.

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Construction

Compact and flexible

Polaris S is equipped with a vertical battery and a lateral air duct. This makes it possible to make the product only 30 cm wide, while retaining a very high cooling capacity.

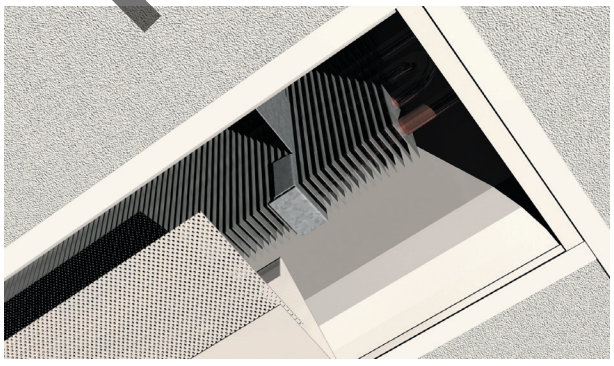
The product is fitted with a hood on the top, which isolates the circulating room air from the suspended ceiling. The hood also protects against noise transfer through the beam. For the best possible accessibility for cleaning, suspension, adjustment or maintenance, the whole bottom of the Polaris S can be removed. The product is supplied with a factory-preset airflow and air pressure drop. The air is supplied to the room through Coanda nozzles placed along the air duct. In terms of noise, the nozzles are shaped like an inverted trumpet, i.e. somewhat negatively directed at the outlet, which also leads to very low noise. The nozzles are easily accessible from below for plugging, if you wish to change the pressure and flow pattern at a later time. Polaris S is supplied in widths of 30 and 60 cm (see picture 2). The dimensions of the wider model are suited for installation in a suspended ceiling. This helps the product blend in the suspended ceiling. The water pipes are made of copper. Nevertheless, the water should be oxygen-free to prevent corrosion.

Drypac™, condensation protection

All Polaris S models can be ordered with the Drypac™ plus feature, condensation protection consisting of perlite (volcanic stone) that is applied to the fin surfaces. Drypac™ has properties that enable it to work with a supply temperature that is 4° C below the dew point, for continuous operation, and 5 to 8° C below the dew point for limited periods. Drypac™ provides both an increased effect and increased security against condensation drips. At a working temperature above the dew point, the output is reduced by 17% but when the working temperature is below the dew point, there is no reduction in output. This means that the effect is highest when the need is greatest.

For more information about Drypac™, refer to the chapter Drypac™.

Picture 2. From left to right: Polaris S-60, Polaris S-30 and Polaris S-60 with fitted acoustic ceiling tiles



Picture 3. Loosening the bottom plate makes the battery easily accessible.

Picture 4. The air duct is cleaned through the cleaning hatch on the end-piece.

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Room environment

Flexible ventilation principle

The Polaris S ventilation principle can be designed in many different ways. Depending on the room conditions and the desired function, the product can be placed along corridor walls, side walls or frontages. The air can be directed out across the ceiling and down along the wall. This leads to very high flexibility regarding the selection of the ventilation principle in each room. In some cases, conventional supply air beams, which spread the air in linearly, can create high air velocities, because the air stream becomes compressed and concentrated towards the centre. To reduce air velocities, Polaris S has a fan-shaped distribution pattern as standard. The outer nozzles point slightly outwards, which leads to air velocities significantly lower than with conventional supply air beams with a linear outlet.

Air injection across ceiling
In this case, the cooled or heated air is spread across the ceiling until it reaches the walls where it is driven down into the room.

The heated air is then absorbed from the room and fed to the beam for continued cooling or heating.

Air injection across wall
In this case, the cooled or heated air is spread down along the wall until it reaches the floor, where it is driven out into the room at a reduced speed. The heated air then rises and is ducted into the beam for further cooling or heating.

Placement at the rear or front edge of the room
Placing a Polaris S at the rear or front edge of the room results in a very discreet ceiling installation. The ceiling area in the middle of the room is left free, which provides great freedom for the positioning of lights, for example. As the air in Polaris S can be directed either across the ceiling or down along the wall, high air velocities in the occupied area can be avoided. At the same time, there are possibilities for coordinating the product's function with the air movements generated by the room's internal heat sources.

Picture 5. Polaris S-30 installed at the ceiling's rear edge, with air injection across the ceiling.

Picture 6. Polaris S-30 installed at the rear edge, with air injection along the wall.

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Data

Variants

Size: The width of Polaris S is either 292 mm (width 30) or 592 mm (width 60). The height is 240 mm (incl. fixings).

Lengths: Polaris S is available in lengths from 1.2 m to 3.6 m in steps of 0.1 m.

Water connection: The cooling water connection is available in o.d. 15 mm. Both horizontal and vertical connections are available as part of the standard package. The connection for the heating pipes is o.d. 15 mm.

Air connection: Available in Ø 100 mm; both horizontal and vertical connections are available as standard.

Design: Polaris S is available with different types of bottom plates. The bottom plate is perforated with Slot 4 x 20 mm as standard, but other surfaces are also available.

Nozzle angle: The nozzles can be ordered with different angles, 0°, 16° or 30°. The default one is 30°.

Anti-crosstalk hood: It is included in the standard package to prevent the spread noise to adjoining rooms, but also when there is a requirement for the room air not to come into contact with the space above the suspended ceiling.

Surface treatment: Polaris S is manufactured as standard from enamelled sheet metal.

Airflow control: The product has a preset pressure drop value, so on-site adjustment is not necessary. A prerequisite is that the duct system in the building has a relatively low-pressure drop compared to that of the product. Where a damper is desired, you can order Lindab's balancing damper.

Colour

The product is available as standard, in signal white RAL 9003 or in pure white RAL 9010, gloss value 30. Other RAL colours on request.

Plus features

Factory preinstalled.

Heating: Polaris S can be supplied with a heating function. An additional coil in the battery heats the room.

Drypac™: Anti-condensation treated cooling batteries that enable water temperatures below the dew point without dripping. Refer to the chapter Drypac™.

Integrated valve and actuator: A control valve, with variable Kv value, and an actuator can be preinstalled in the product.

Air vent: Air vents are not supplied as part of the standard package but it is possible to order to have them preinstalled.

Regula Secura condensation protection: There is an option to have Lindab's Regula Secura condensation guard installed in the product (refer to chapter Regula).

Connect: The product can be equipped with Regula Connect connection card (refer to chapter Regula).

Adaptation to suspended ceiling: The product can be adapted to most types of suspended ceilings available on the market.

Accessories

Delivered separately.

Control: Refer to the chapter Regula.

Hangers: For recommended installation principles (see: "Polaris S Installation Instruction").

All these different hangers are available at Lindab:
-pendulum hangers (in different sizes)
-threaded rods M8
-wiring hanger system

For additional accessories please refer to the "Accessories" document on www.lindqst.com.

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Dimensioning

Cooling capacity air P_a

1. Start by calculating the capacity required for the room, to keep a certain temperature. Lindab's TEKNOsim is an excellent tool for this.
2. Calculate which cooling capacity, or read in diagram 1, that is supplied by the ventilation air.
3. Remaining heat load needs to be cooled by the water circuit in Polaris S.

The formula for calculating the capacity of the air:
$P_a = q_{ma} \times c_{pa} \times \Delta t_{ra}$

Size comparison by t_r = 25°C with:
q_a = Primary air flow rate
P_a [W] = q_a [l/s] x 1.2 Δt_{ra} [K] and
P_a [W] = q_a [m³/h] x 0.33 Δt_{ra} [K]

Definitions:

P_a	= Cooling capacity air [W]
P_w	= Cooling capacity water [W]
P_{tot}	= Cooling capacity total [W]
q_{ma}	= Air mass flow rate [kg/s]
q_a	= Primary air flow rate [l/s]
q_w	= Water flow rate [l/s]
q_{wmin}	= Minimal water flow rate [l/s]
q_{wnom}	= Nominal water flow rate [l/s]
c_{pa}	= Specific heat capacity air [1,004 kJ/kg K]
t_r	= Room air temperature [°C]
t_{wi}	= Water inlet temperature [°C]
t_{wo}	= Water outlet temperature [°C]
Δt_{ra}	= Temp. diff., room air and primary air temp. [K]
Δt_{rw}	= Temp. diff., room air and mean water temp. [K]
Δt_w	= Temp. diff. water circuit [K]
$\varepsilon_{\Delta tw}$	= Capacity correction for temperature
ε_{qw}	= Capacity correction for water flow
P_{Lt}	= Specific cooling capacity [W/K]

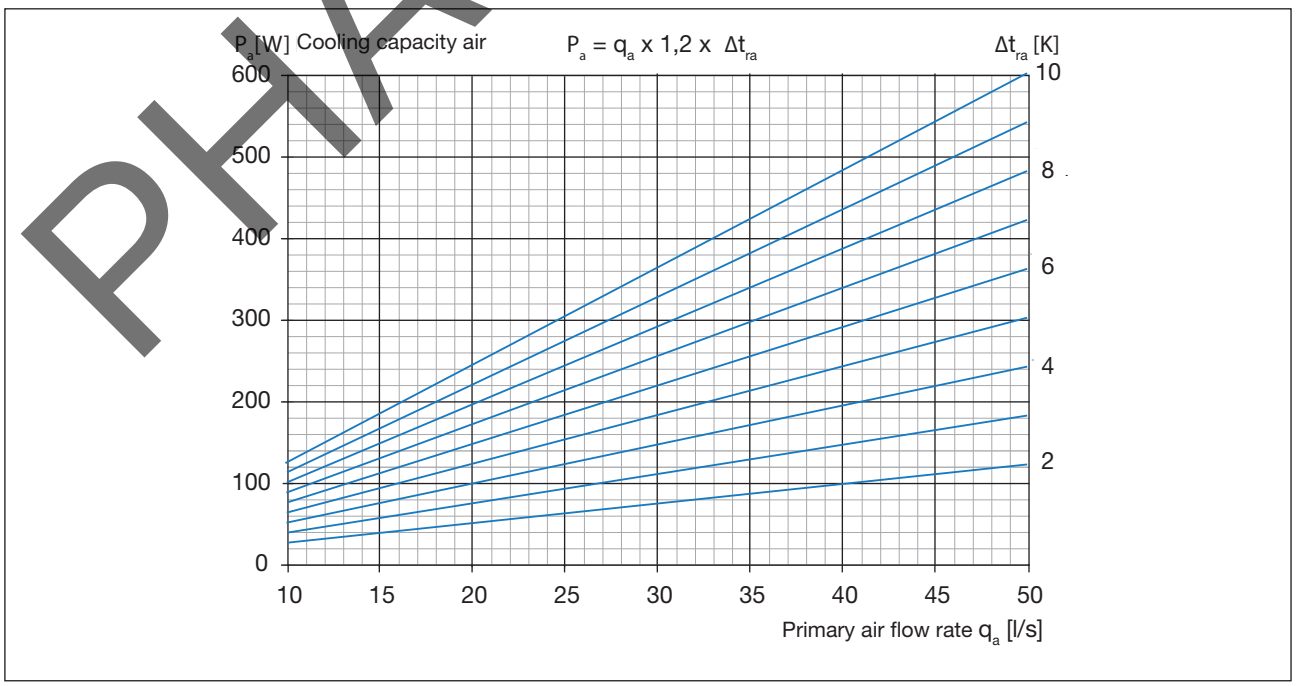

Diagram 1. Cooling capacity air P_a as function of the primary air flow rate q_a. If the air supply flow is 25 l/s and the temperature difference of the room air and the supply air is Δt_{ra} = 6 K, then the Cooling capacity of the air is 180 W.

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Dimensioning

Cooling capacity water P_w

Follow the instructions below to read off the effect from the diagram.

1. Calculate Δt_{rw}.
2. Product length L minus 0.3 m, to obtain the active length L_{act}.
3. Divide the primary air flow rate q_a by the active length L_{act}. Enter the result on the lower axis of diagram 2.
4. Follow the flow line to the right pressure, and then read off the specific cooling capacity P_{Lt} per active metre.
5. Multiply the specific cooling capacity that was read off by Δt_{rw} and active length L_{act}.

Example 1 Cooling:
What is the cooling capacity of a 2.4 m Polaris S with 20 l/s and pressure of 100 Pa?

The room's summer temperature is assumed to be t_r = 24.5° C The cooling water temperature in/out of the Polaris S is 14/17° C.

Answer:
Temperature difference:
$\Delta t_{rw} = t_r - (t_{wi} + t_{wo})/2$
Δt_{rw} = 24.5 - (14+17) / 2 = 9 K

Active length:
L_{act} = 2.4 m - 0.3 m = 2.1 m
q_a / L_{act} = 20 l/s / 2.1 m = 9.5 l/(s m)

Read off, from diagram 2: P_{Lt} = 33.7 W/(m K).
Cooling capacity: P_w = 33.7 W/(m K) × 9 K × 2.1 m = 637 W

NB! The capacity diagram applies for the nominal water flow of q_{wnom} = 0.038 l/s. To obtain the right cooling capacity P_w for other flows, read off the capacity correction factor ε_{qw} from diagram 3, and then multiply the capacity, which is read off, by this factor as shown in example 2 for heating.

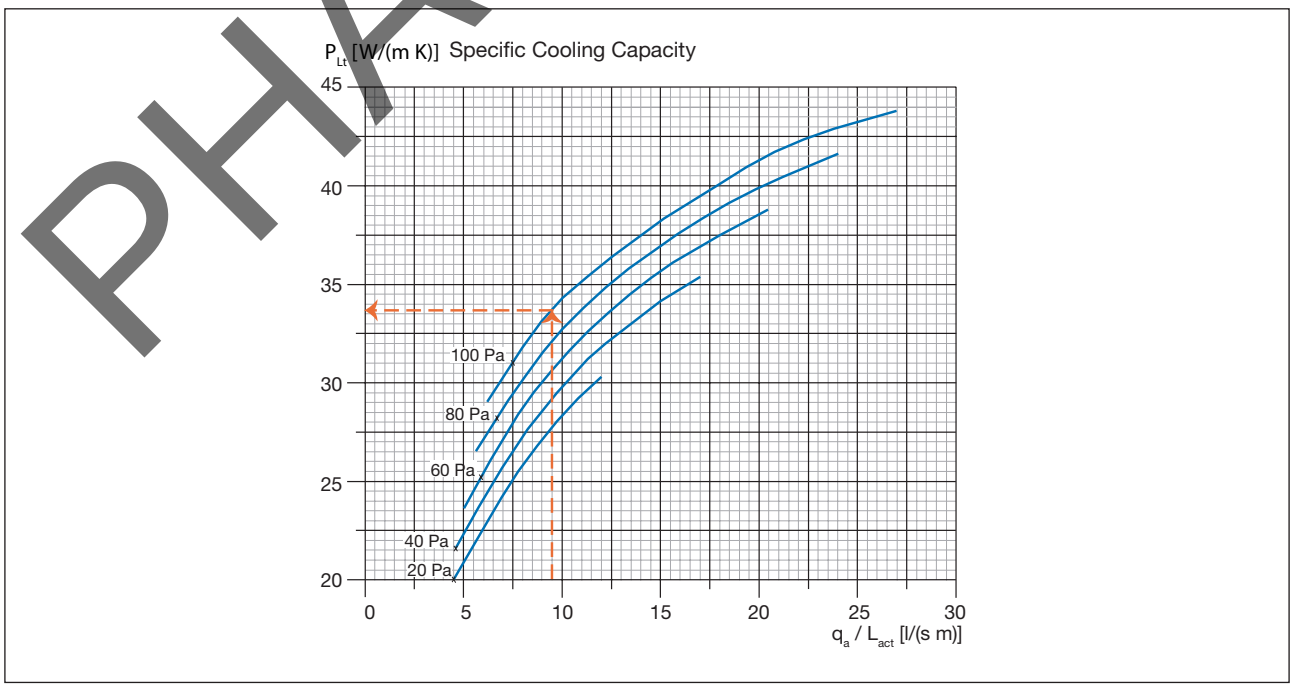

Diagram 2. Specific cooling capacity P_{Lt} as a function of primary air flow rate per active metre at nozzle pressures of 20, 40, 60, 80 and 100 Pa.

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Dimensioning

Capacity correction for water flow ε_{qw}

Example 2 Heating:
What is the heating capacity of a 2.4 m Polaris S with 20 l/s and pressure of 100 Pa?

The room winter temperature is assumed to be t_r = 21° C.
The hot water temperature in/out of Polaris S is 55/47° C

Answer:
Temperature difference:
$\Delta t_{rw} = (t_{wi} + t_{wo})/2 - t_r$
$\Delta t_{rw} = (55+47) / 2 - 21 = 30$ K

Active length:
$L_{act} = 2.4$ m - 0.3 m = 2.1 m
$q_a / L_{act} = 20$ l/s / 2.1 m = 9.5 l/(s·m)

Read off, from diagram 2: $P_{Lt} = 33.7$ W/(m K).
Water capacity: $P_w = 33.7 \times 30$ K $\times$ 2.1m = 2123 W

Use the calculated water capacity and calculate the water flow: $q_w = P_w / (c_{pw} \times \Delta t_w)$
$q_w = 2123 / (4200 \times 8) = 0.063$ l/s

The capacity correction ε_{qw} will then be 0.743 (see diagram 3) and the new capacity: $P_w = 2123 \times 0.743 = 1577$ W

Using the new heating capacity, a new water flow is calculated: $q_w = 1577 / (4200 \times 8) = 0.047$ l/s

Read off the capacity correction ε_{qw} at 0.741 and calculate the capacity: $P_w = 2123 \times 0.741 = 1573$ W

Using the new heating capacity, a new water flow is calculated: $q_w = 1573 / (4200 \times 8) = 0.047$ l/s

Seeing that the flow is near stabile at this point in the calculation, the heating capacity is calculated to be 1573 W.

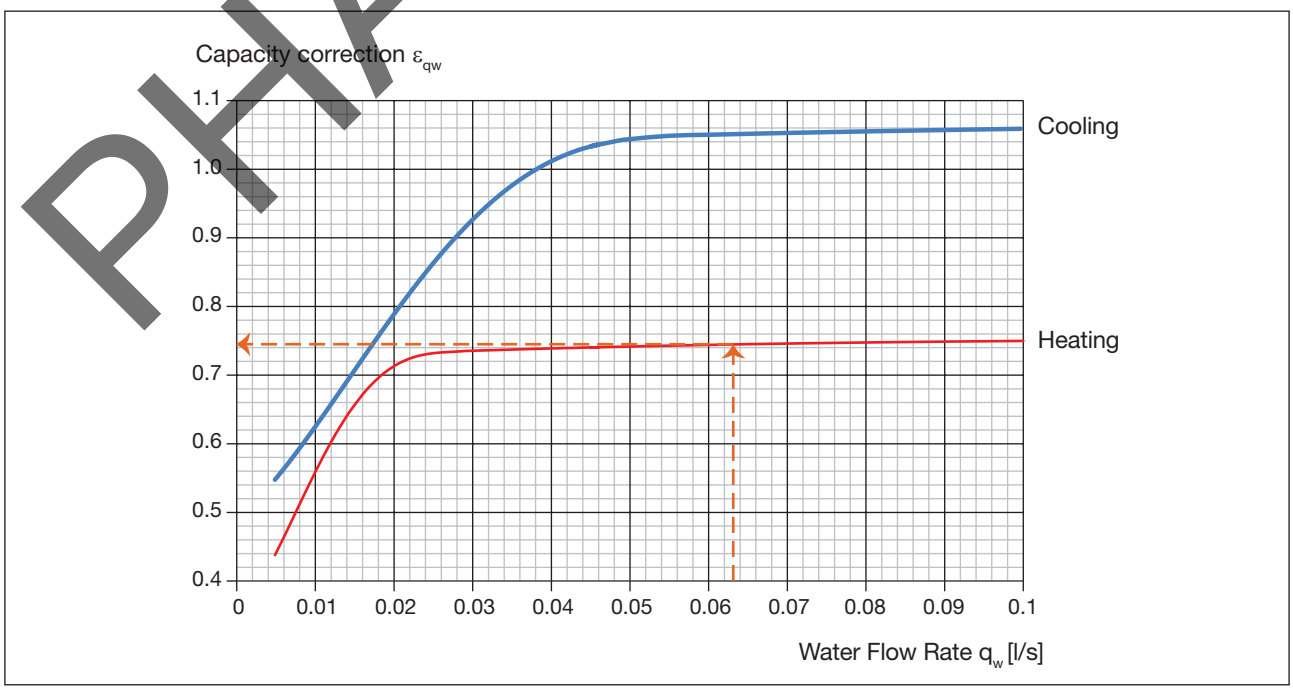

Diagram 3. Capacity correction ε_{qw} for water flow for both cooling and heating.

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Pressure drop in water circuit, cooling

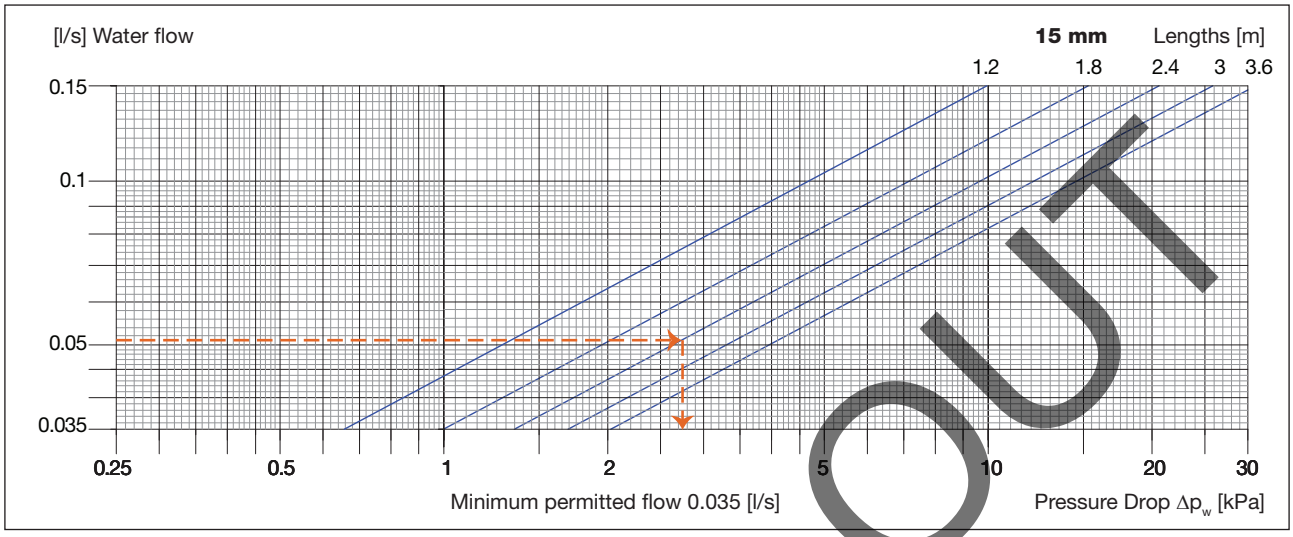

Diagram 4. Pressure drop in water circuit, cooling.

Example 3 Cooling:
Polaris S 2.4 m, which provides an output of 637 W.
Δt_w = 3 K
$q_w = P_w / (c_{pw} \times \Delta t_w)$
q_w = 637 W / (4200 Ws/(kg K) × 3 K) = 0.051 l/s
The pressure drop in the water circuit in diagram 4 is read off as Δp_w = 2.75 kPa.

Definitions:
q_w = Water flow rate [l/s]
P_w = Cooling capacity water [W]
c_{pw} = Specific heat capacity water [4200 Ws/(kg K)]
Δt_w = Temperature difference water circuit [K]
t_{wio} = Mean water temperature [°C]
Δp_w = Pressure loss water circuit [kPa]

Pressure drop in water circuit, heating

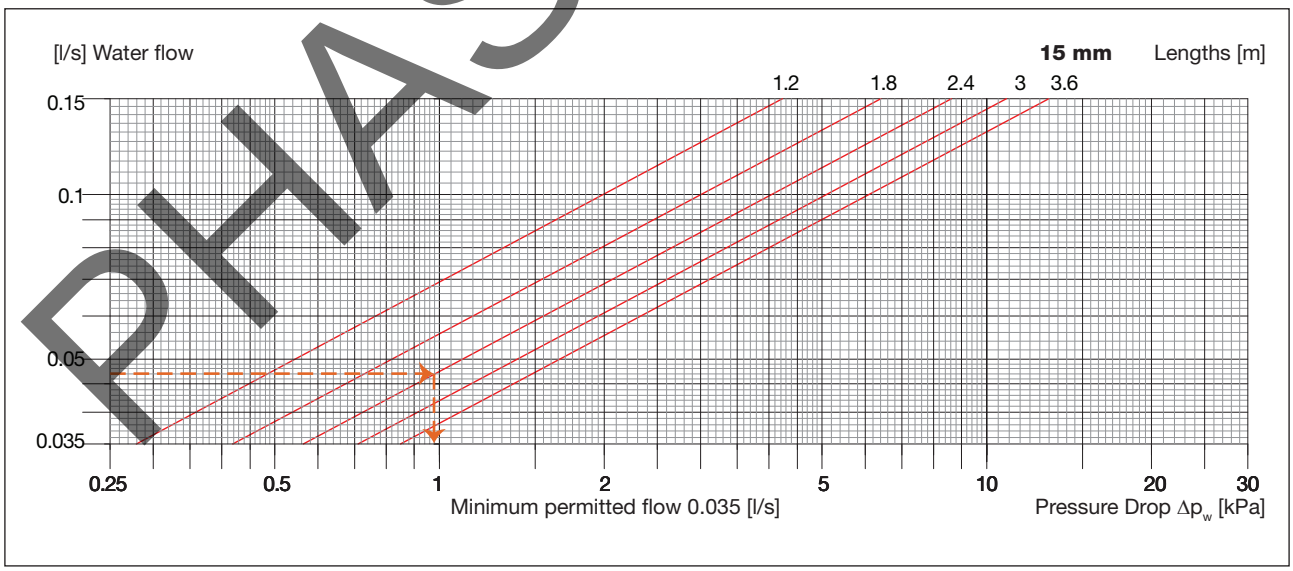

Diagram 5. Pressure drop in water circuit, heating.

Example 4 Heating:
Polaris S 2.4 m, which provides an output of 1573 W.
Δt_w = 8 K
$q_w = P_w / (c_{pw} \times \Delta t_w)$
q_w = 1573 W/(4200 Ws/(kg K) × 8 K) = 0.047 l/s
The pressure drop in the water circuit in diagram 5 is read off as Δp_w = 0.98 kPa.

* Diagrams are for a certain mean water temperature t_{wio}. For other temperatures please do your calculations in our waterborne calculator in www.lindqst.com!

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Dimensioning

Pressure drop in air connection

Table 1, below, shows the pressure drop in the connection. After calculating the necessary pressure for the supply air beam, add it to the selected static pressure in the nozzles.

Example 5:
Polaris S-30-15-100-C7L-2.4 with 20 l/s and a static nozzle pressure of 60 Pa. This provides a necessary total pressure in the duct of 60 Pa + 8 Pa = 68 Pa.

Polaris S							
Air flow (l/s)	10	15	20	25	30	35	40
Connection (Pa)	3	5	8	12	17	22	28

Table 1. Air pressure drop in the connection to Polaris S.

Cooling effect, Polaris S

Effect data

All table values are presented with flow-adjusted effects based on the Δt for Water out-in given in the table.

Noise

The table below presents both the sound pressure level with 10 m² Sabine equivalent sound absorption area dB(A) and the sound output level.

Nozzle pressure 60 Pa			Water														Air		
q_A (m³/h)	q_A (l/s)	Polaris S	Δt_{rw} = 7 K			Δt_{rw} = 8 K			Δt_{rw} = 9 K			Δt_{rw} = 10 K			Δt_{rw} = 11 K			Total pressure, duct	Noise pressure	Noise power
			P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	Pa	dB(A)	dB(A)
36	10	1,2	129	0,010	0,1	156	0,012	0,1	186	0,015	0,2	219	0,017	0,2	256	0,020	0,2	63	<20	<24
		1,8	205	0,016	0,3	254	0,020	0,4	309	0,025	0,6	367	0,029	0,7	425	0,034	0,9			
		2,4	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0			
54	15	1,2	154	0,012	0,1	188	0,015	0,2	226	0,018	0,2	269	0,021	0,3	315	0,025	0,3	65	21	25
		1,8	265	0,021	0,4	331	0,026	0,6	399	0,032	0,8	464	0,037	1,1	526	0,042	1,3			
		2,4	372	0,030	1,0	453	0,036	1,5	529	0,042	1,9	598	0,048	2,3	663	0,053	2,8			
		3,0	464	0,037	1,9	551	0,044	2,6	630	0,050	3,3	701	0,056	4,0	773	0,062	4,7			
72	20	1,8	312	0,025	0,6	387	0,031	0,8	460	0,037	1,1	528	0,042	1,3	590	0,047	1,6	68	24	28
		2,4	**440**	**0,085**	**1,4**	**526**	**0,042**	**1,9**	**603**	**0,048**	**2,4**	**675**	**0,054**	**2,9**	**743**	**0,059**	**3,4**			
		3,0	539	0,043	2,5	626	0,050	3,3	708	0,056	4,0	788	0,063	4,9	869	0,069	5,8			
		3,6	618	0,049	3,9	710	0,057	5,0	801	0,064	6,1	891	0,071	7,4	982	0,078	8,9			
90	25	1,8	347	0,028	0,7	426	0,034	0,9	501	0,040	1,2	570	0,045	1,5	635	0,051	1,8	72	26	30
		2,4	491	0,039	1,7	578	0,046	2,2	658	0,052	2,8	732	0,058	3,3	806	0,064	4,0			
		3,0	596	0,047	3,0	687	0,055	3,8	774	0,062	4,7	862	0,069	5,7	949	0,076	6,8			
		3,6	679	0,054	4,6	778	0,062	5,8	877	0,070	7,2	976	0,078	8,8	1075	0,086	10,5			
108	30	1,8	372	0,030	0,7	454	0,036	1,0	530	0,042	1,4	599	0,048	1,7	664	0,053	2,0	77	27	31
		2,4	529	0,042	1,9	616	0,049	2,5	698	0,056	3,1	776	0,062	3,7	855	0,068	4,4			
		3,0	642	0,051	3,4	735	0,059	4,3	829	0,066	5,3	922	0,073	6,5	1016	0,081	7,7			
		3,6	730	0,058	5,2	836	0,067	6,6	942	0,075	8,2	1049	0,084	10,0	1156	0,092	12,0			
126	35	2,4	557	0,044	2,1	646	0,051	2,7	729	0,058	3,3	811	0,065	4,0	893	0,071	4,8	82	28	32
		3,0	677	0,054	3,7	775	0,062	4,7	873	0,070	5,9	972	0,077	7,1	1071	0,085	8,5			
		3,6	774	0,062	5,8	886	0,071	7,4	999	0,080	9,2	1112	0,089	11,2	1225	0,098	13,3			
144	40	2,4	578	0,046	2,2	668	0,053	2,8	753	0,060	3,5	839	0,067	4,2	924	0,074	5,1	88	30	34
		3,0	705	0,056	4,0	808	0,064	5,1	910	0,072	6,3	1013	0,081	7,7	1116	0,089	9,2			
		3,6	811	0,065	6,3	929	0,074	8,0	1047	0,083	10,0	1166	0,093	12,2	1284	0,102	14,6			

Table 2. Flow-adjusted effect table. Cooling circuit Δt = 3° C (Water in-out).
For the red values, the flow is below the recommended minimum flow of 0.035 l/s at Δt = 3° C. Increase the flow to the recommended minimum flow.

Supply air beam Polaris S

Cooling effect, Polaris S

Nozzle pressure 80 Pa			Water														Air		
q_A (m³/h)	q_A (l/s)	Polaris S	Δt_{rw} = 7 K			Δt_{rw} = 8 K			Δt_{rw} = 9 K			Δt_{rw} = 10 K			Δt_{rw} = 11 K			Total pressure, duct	Noise pressure	Noise power
			P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	Pa	dB(A)	dB(A)
36	10	1,2	137	0,011	0,1	166	0,013	0,1	199	0,016	0,2	235	0,019	0,2	275	0,022	0,3	83	<20	<24
		1,8	224	0,018	0,3	279	0,022	0,5	339	0,027	0,6	400	0,032	0,8	460	0,037	1,1			
54	15	1,2	162	0,013	0,1	199	0,016	0,2	241	0,019	0,2	286	0,023	0,3	335	0,027	0,4	85	22	26
		1,8	286	0,023	0,5	356	0,028	0,7	427	0,034	0,9	494	0,039	1,2	556	0,044	1,5			
		2,4	404	0,032	1,2	488	0,039	1,6	564	0,045	2,1	636	0,051	2,6	700	0,056	3,1			
		3,0	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0			
72	20	1,2	180	0,014	0,1	222	0,018	0,2	269	0,021	0,3	320	0,026	0,4	373	0,030	0,5	88	25	29
		1,8	334	0,027	0,6	412	0,033	0,9	486	0,039	1,2	555	0,044	1,5	617	0,049	1,8			
		2 4	470	0 037	1 5	556	0 044	2 1	636	0 051	2 6	707	0 056	3 1	779	0 062	3 7			
		3,0	573	0,046	2,8	663	0,053	3,6	748	0,060	4,4	832	0,066	5,4	917	0,073	6,4			
		3,6	658	0,052	4,3	754	0,060	5,5	850	0,068	6,8	946	0,075	8,3	1042	0,083	9,9			
90	25	1,8	369	0,029	0,7	450	0,036	1,0	526	0,042	1,3	595	0,047	1,7	660	0,053	2,0	92	27	31
		2,4	519	0,041	1,8	606	0,048	2,4	686	0,055	3,0	764	0,061	3,6	842	0,067	4,3			
		3,0	627	0,050	3,3	721	0,057	4,2	812	0,065	5,2	904	0,072	6,3	996	0,079	7,5			
		3,6	716	0,057	5,0	820	0,065	6,4	925	0,074	8,0	1029	0,082	9,7	1134	0,090	11,6			
108	30	1,8	394	0,031	0,8	478	0,038	1,1	554	0,044	1,5	623	0,050	1,8	689	0,055	2,1	97	28	32
		2,4	554	0,044	2,0	644	0,051	2,7	726	0,058	3,3	808	0,064	4,0	890	0,071	4,7			
		3,0	671	0,053	3,7	768	0,061	4,7	866	0,069	5,8	964	0,077	7,0	1062	0,085	8,4			
		3,6	766	0,061	5,7	878	0,070	7,2	989	0,079	9,0	1101	0,088	11,0	1213	0,097	13,1			
126	35	1,8	416	0,033	0,9	501	0,040	1,2	577	0,046	1,6	649	0,052	1,9	715	0,057	2,3	102	29	33
		2,4	581	0,046	2,2	672	0,053	2,9	757	0,060	3,5	843	0,067	4,3	928	0,074	5,1			
		3,0	705	0,056	4,0	808	0,064	5,1	911	0,073	6,3	1013	0,081	7,7	1117	0,089	9,2			
		3,6	810	0,064	6,3	927	0,074	8,0	1045	0,083	10,0	1163	0,093	12,1	1282	0,102	14,5			
144	40	2,4	603	0,048	2,4	694	0,055	3,0	782	0,062	3,7	871	0,069	4,5	959	0,076	5,4	108	31	35
		3,0	734	0,058	4,3	840	0,067	5,5	947	0,075	6,8	1054	0,084	8,3	1161	0,092	9,9			
		3,6	847	0,067	6,8	970	0,077	8,7	1093	0,087	10,8	1217	0,097	13,2	1340	0,107	15,8			

Table 3. Flow-adjusted effect table. Cooling circuit Δt = 3° C (Water in-out).
For the red values, the flow is below the recommended minimum flow of 0.035 l/s at Δt = 3° C. Increase the flow to the recommended minimum flow.

Nozzle pressure 100 Pa			Water														Air		
q_A (m³/h)	q_A (l/s)	Polaris S	Δt_{rw} = 7 K			Δt_{rw} = 8 K			Δt_{rw} = 9 K			Δt_{rw} = 10 K			Δt_{rw} = 11 K			Total pressure, duct	Noise pressure	Noise power
			P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	Pa	dB(A)	dB(A)
36	10	1,2	145	0,012	0,1	177	0,014	0,1	212	0,017	0,2	252	0,020	0,2	295	0,023	0,3	103	<20	<24
		1,8	245	0,020	0,4	306	0,024	0,5	371	0,030	0,7	435	0,035	1,0	496	0,039	1,2			
54	15	1,2	171	0,014	0,1	210	0,017	0,2	254	0,020	0,2	303	0,024	0,3	354	0,028	0,4	105	22	26
		1,8	308	0,025	0,6	382	0,030	0,8	455	0,036	1,0	522	0,042	1,3	585	0,047	1,6			
		2,4	437	0,035	1,4	523	0,042	1,9	600	0,048	2,3	671	0,053	2,9	740	0,059	3,4			
72	20	1,2	188	0,015	0,2	232	0,019	0,2	282	0,022	0,3	336	0,027	0,4	391	0,031	0,5	108	26	30
		1,8	355	0,028	0,7	435	0,035	1,0	510	0,041	1,3	579	0,046	1,6	644	0,051	1,9			
		2,4	499	0,040	1,7	586	0,047	2,3	666	0,053	2,8	741	0,059	3,4	816	0,065	4,0			
		3,0	608	0,048	3,1	700	0,056	4,0	789	0,063	4,9	878	0,070	5,9	967	0,077	7,1			
		3,6	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0			
90	25	1,8	388	0,031	0,8	471	0,038	1,1	547	0,044	1,4	617	0,049	1,8	682	0,054	2,1	112	28	32
		2,4	544	0,043	2,0	634	0,051	2,6	715	0,057	3,2	796	0,063	3,9	877	0,070	4,6			
		3,0	659	0,053	3,6	755	0,060	4,5	851	0,068	5,6	948	0,075	6,8	1044	0,083	8,1			
		3,6	755	0,060	5,5	865	0,069	7,1	975	0,078	8,8	1085	0,086	10,7	1195	0,095	12,7			
108	30	1,8	413	0,033	0,9	497	0,040	1,2	574	0,046	1,6	645	0,051	1,9	711	0,057	2,3	117	29	33
		2,4	578	0,046	2,2	668	0,053	2,8	753	0,060	3,5	838	0,067	4,2	924	0,074	5,1			
		3,0	700	0,056	4,0	802	0,064	5,0	903	0,072	6,2	1006	0,080	7,6	1108	0,088	9,1			
		3,6	804	0,064	6,2	921	0,073	7,9	1038	0,083	9,8	1155	0,092	12,0	1272	0,101	14,3			
126	35	1,8	434	0,035	1,0	520	0,041	1,3	596	0,047	1,7	668	0,053	2,0	736	0,059	2,4	122	30	34
		2,4	603	0,048	2,4	695	0,055	3,0	783	0,062	3,8	872	0,069	4,6	960	0,076	5,4			
		3,0	733	0,058	4,3	840	0,067	5,5	946	0,075	6,8	1053	0,084	8,3	1160	0,092	9,9			
		3,6	846	0,067	6,8	969	0,077	8,7	1092	0,087	10,8	1215	0,097	13,1	1339	0,107	15,7			
144	40	1,8	457	0,036	1,1	543	0,043	1,4	621	0,049	1,8	693	0,055	2,2	764	0,061	2,6	128	32	36
		2,4	623	0,050	2,5	716	0,057	3,2	807	0,064	4,0	899	0,072	4,8	990	0,079	5,7			
		3,0	760	0,061	4,6	871	0,069	5,8	982	0,078	7,3	1093	0,087	8,8	1204	0,096	10,6			
		3,6	881	0,070	7,3	1009	0,080	9,3	1138	0,091	11,6	1266	0,101	14,2	1395	0,111	17,0			

Table 4. Flow-adjusted effect table. Cooling circuit Δt = 3° C (Water in-out).
For the red values, the flow is below the recommended minimum flow of 0.035 l/s at Δt = 3° C. Increase the flow to the recommended minimum flow.

Supply air beam Polaris S

Heating effect, Polaris S

Nozzle pressure 60 Pa			Water														Air		
q_A (m³/h)	q_A (l/s)	Polaris S	Δt_{rw} = 20 K			Δt_{rw} = 25 K			Δt_{rw} = 30 K			Δt_{rw} = 35 K			Δt_{rw} = 40 K			Total pressure, duct	Noise pressure	Noise power
			P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	Pa	dB(A)	dB(A)
36	10	1,2	266	0,006	0,0	350	0,008	0,0	446	0,011	0,0	557	0,013	0,1	684	0,016	0,1	63	<20	<24
		1,8	395	0,009	0,1	539	0,013	0,1	714	0,017	0,1	920	0,022	0,2	1147	0,027	0,3			
		2,4	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0			
54	15	1,2	309	0,007	0,0	413	0,010	0,0	533	0,013	0,1	675	0,016	0,1	838	0,020	0,1	65	21	25
		1,8	491	0,012	0,1	687	0,016	0,1	926	0,022	0,2	1193	0,029	0,3	1462	0,035	0,4			
		2,4	669	0,016	0,2	963	0,023	0,3	1294	0,031	0,5	1616	0,039	0,7	1904	0,045	0,9			
		3,0	854	0,020	0,3	1232	0,029	0,6	1608	0,038	0,9	1942	0,046	1,3	2243	0,054	1,6			
72	20	1,8	567	0,014	0,1	807	0,019	0,2	1091	0,026	0,3	1390	0,033	0,4	1673	0,040	0,5	68	24	28
		2,4	802	0,019	0,2	1159	0,028	0,4	1526	0,036	0,6	1858	0,044	0,9	2157	0,052	1,2			
		3,0	1034	0,025	0,4	1466	0,035	0,8	1857	0,044	1,2	2201	0,053	1,6	2521	0,060	2,0			
		3,6	1256	0,030	0,7	1722	0,041	1,3	2127	0,051	1,8	2488	0,059	2,4	2849	0,068	3,0			
90	25	1,8	625	0,015	0,1	897	0,021	0,2	1210	0,029	0,3	1524	0,036	0,5	1811	0,043	0,6	72	26	30
		2,4	915	0,022	0,3	1315	0,031	0,5	1698	0,041	0,8	2034	0,049	1,1	2340	0,056	1,4			
		3,0	1192	0,028	0,6	1651	0,039	1,0	2048	0,049	1,4	2405	0,057	1,8	2755	0,066	2,3			
		3,6	1437	0,034	0,9	1916	0,046	1,5	2329	0,056	2,1	2724	0,065	2,8	3120	0,075	3,6			
108	30	1,8	670	0,016	0,1	965	0,023	0,2	1297	0,031	0,4	1618	0,039	0,5	1907	0,046	0,7	77	27	31
		2,4	1008	0,024	0,3	1434	0,034	0,6	1824	0,044	0,9	2168	0,052	1,2	2483	0,059	1,5			
		3,0	1323	0,032	0,7	1796	0,043	1,1	2201	0,053	1,6	2575	0,062	2,1	2949	0,070	2,6			
		3,6	1588	0,038	1,1	2073	0,050	1,7	2504	0,060	2,4	2929	0,070	3,2	3355	0,080	4,1			
126	35	2,4	1082	0,026	0,4	1524	0,036	0,6	1917	0,046	1,0	2264	0,054	1,3	2593	0,062	1,6	82	28	32
		3,0	1430	0,034	0,7	1908	0,046	1,2	2321	0,055	1,7	2714	0,065	2,3	3109	0,074	2,9			
		3,6	1711	0,041	1,2	2205	0,053	1,9	2654	0,063	2,7	3105	0,074	3,5	3556	0,085	4,5			
144	40	2,4	1142	0,027	0,4	1594	0,038	0,7	1989	0,048	1,0	2341	0,056	1,4	2682	0,064	1,7	88	30	34
		3,0	1515	0,036	0,8	1997	0,048	1,3	2419	0,058	1,8	2829	0,068	2,4	3240	0,077	3,1			
		3,6	1812	0,043	1,4	2312	0,055	2,1	2783	0,066	2,9	3255	0,078	3,9	3728	0,089	4,9			

Table 5. Flow-adjusted effect table. Heating circuit Δt = 10° C (Water in-out).
For the red values, the flow is below the recommended minimum flow of 0.035 l/s at Δt = 10° C. Increase the flow to the recommended minimum flow.

Nozzle pressure 80 Pa			Water														Air		
q_A (m³/h)	q_A (l/s)	Polaris S	Δt_{rw} = 20 K			Δt_{rw} = 25 K			Δt_{rw} = 30 K			Δt_{rw} = 35 K			Δt_{rw} = 40 K			Total pressure, duct	Noise pressure	Noise power
			P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	Pa	dB(A)	dB(A)
36	10	1,2	280	0,007	0,0	371	0,009	0,0	475	0,011	0,0	595	0,014	0,1	734	0,018	0,1	83	<20	<24
		1,8	425	0,010	0,1	586	0,014	0,1	782	0,019	0,2	1009	0,024	0,2	1253	0,030	0,3			
54	15	1,2	324	0,008	0,0	435	0,010	0,0	564	0,013	0,1	717	0,017	0,1	892	0,021	0,1	85	22	26
		1,8	524	0,013	0,1	740	0,018	0,1	999	0,024	0,2	1282	0,031	0,3	1559	0,037	0,5			
		2,4	729	0,017	0,2	1053	0,025	0,4	1404	0,034	0,6	1732	0,041	0,8	2023	0,048	1,0			
		3,0	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0			
72	20	1,2	353	0,008	0,0	477	0,011	0,0	625	0,015	0,1	800	0,019	0,1	998	0,024	0,1	88	25	29
		1,8	603	0,014	0,1	862	0,021	0,2	1165	0,028	0,3	1474	0,035	0,4	1760	0,042	0,6			
		2,4	866	0,021	0,3	1248	0,030	0,5	1626	0,039	0,7	1960	0,047	1,0	2262	0,054	1,3			
		3,0	1128	0,027	0,5	1578	0,038	0,9	1972	0,047	1,3	2323	0,056	1,7	2661	0,064	2,2			
		3,6	1374	0,033	0,9	1849	0,044	1,4	2257	0,054	2,0	2640	0,063	2,6	3024	0,072	3,4			
90	25	1,8	663	0,016	0,1	955	0,023	0,2	1284	0,031	0,3	1605	0,038	0,5	1893	0,045	0,7	92	27	31
		2,4	982	0,023	0,3	1401	0,033	0,6	1789	0,043	0,8	2133	0,051	1,2	2443	0,058	1,5			
		3,0	1284	0,031	0,6	1753	0,042	1,1	2158	0,052	1,5	2524	0,060	2,0	2891	0,069	2,5			
		3,6	1548	0,037	1,0	2031	0,049	1,7	2457	0,059	2,3	2873	0,069	3,1	3291	0,079	3,9			
108	30	1,8	710	0,017	0,1	1026	0,025	0,2	1371	0,033	0,4	1697	0,041	0,6	1988	0,047	0,7	97	28	32
		2,4	1076	0,026	0,4	1517	0,036	0,6	1910	0,046	1,0	2256	0,054	1,3	2584	0,062	1,6			
		3,0	1413	0,034	0,7	1890	0,045	1,2	2301	0,055	1,7	2692	0,064	2,2	3083	0,074	2,9			
		3,6	1691	0,040	1,2	2184	0,052	1,9	2629	0,063	2,6	3075	0,073	3,5	3522	0,084	4,5			
126	35	1,8	753	0,018	0,1	1088	0,026	0,3	1445	0,035	0,4	1775	0,042	0,6	2066	0,049	0,8	102	29	33
		2,4	1151	0,027	0,4	1605	0,038	0,7	2000	0,048	1,0	2353	0,056	1,4	2695	0,064	1,7			
		3,0	1516	0,036	0,8	1998	0,048	1,3	2419	0,058	1,8	2830	0,068	2,4	3241	0,077	3,1			
		3,6	1807	0,043	1,4	2307	0,055	2,1	2777	0,066	2,9	3248	0,078	3,8	3721	0,089	4,9			
144	40	2,4	1212	0,029	0,4	1673	0,040	0,8	2071	0,049	1,1	2431	0,058	1,5	2784	0,067	1,8	108	31	35
		3,0	1598	0,038	0,9	2084	0,050	1,4	2517	0,060	2,0	2943	0,070	2,6	3371	0,081	3,4			
		3,6	1903	0,045	1,5	2413	0,058	2,3	2904	0,069	3,1	3397	0,081	4,2	3891	0,093	5,4			

Table 6. Flow-adjusted effect table. Heating circuit Δt = 10° C (Water in-out).
For the red values, the flow is below the recommended minimum flow of 0.035 l/s at Δt = 10° C. Increase the flow to the recommended minimum flow.

Supply air beam Polaris S

Heating effect, Polaris S

Nozzle pressure 100 Pa			Water														Air		
q_A (m³/h)	q_A (l/s)	Polaris S	Δt_{rw} = 20 K			Δt_{rw} = 25 K			Δt_{rw} = 30 K			Δt_{rw} = 35 K			Δt_{rw} = 40 K			Total pressure, duct	Noise pressure	Noise power
			P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	P(W)	q(l/s)	p(kPa)	Pa	dB(A)	dB(A)
36	10	1,2	295	0,007	0,0	391	0,009	0,0	504	0,012	0,0	634	0,015	0,1	785	0,019	0,1	103	<20	<24
		1,8	460	0,011	0,1	639	0,015	0,1	857	0,020	0,2	1107	0,026	0,3	1366	0,033	0,4			
54	15	1,2	338	0,008	0,0	455	0,011	0,0	593	0,014	0,1	756	0,018	0,1	943	0,023	0,1	105	22	26
		1,8	560	0,013	0,1	795	0,019	0,2	1075	0,026	0,3	1372	0,033	0,4	1653	0,039	0,5			
		2,4	796	0,019	0,2	1150	0,027	0,4	1517	0,036	0,6	1848	0,044	0,9	2147	0,051	1,2			
72	20	1,2	367	0,009	0,0	498	0,012	0,0	654	0,016	0,1	839	0,020	0,1	1048	0,025	0,1	108	26	30
		1,8	639	0,015	0,1	918	0,022	0,2	1237	0,030	0,3	1553	0,037	0,5	1841	0,044	0,6			
		2,4	934	0,022	0,3	1339	0,032	0,5	1724	0,041	0,8	2061	0,049	1,1	2370	0,057	1,4			
		3,0	1227	0,029	0,6	1691	0,040	1,0	2089	0,050	1,4	2451	0,059	1,9	2807	0,067	2,4			
		3,6	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0	0	0,000	0,0			
90	25	1,8	699	0,017	0,1	1009	0,024	0,2	1351	0,032	0,4	1676	0,040	0,5	1965	0,047	0,7	112	28	32
		2,4	1049	0,025	0,3	1484	0,035	0,6	1876	0,045	0,9	2221	0,053	1,2	2544	0,061	1,6			
		3,0	1378	0,033	0,7	1854	0,044	1,2	2262	0,054	1,6	2646	0,063	2,2	3031	0,072	2,8			
		3,6	1659	0,040	1,2	2152	0,051	1,8	2590	0,062	2,6	3029	0,072	3,4	3470	0,083	4,3			
108	30	1,8	746	0,018	0,1	1079	0,026	0,3	1434	0,034	0,4	1763	0,042	0,6	2055	0,049	0,8	117	29	33
		2,4	1141	0,027	0,4	1593	0,038	0,7	1988	0,047	1,0	2340	0,056	1,4	2681	0,064	1,7			
		3,0	1500	0,036	0,8	1981	0,047	1,3	2400	0,057	1,8	2808	0,067	2,4	3216	0,077	3,1			
		3,6	1792	0,043	1,3	2291	0,055	2,1	2757	0,066	2,9	3225	0,077	3,8	3693	0,088	4,9			
126	35	1,8	789	0,019	0,2	1141	0,027	0,3	1506	0,036	0,5	1838	0,044	0,6	2137	0,051	0,8	122	30	34
		2,4	1214	0,029	0,4	1676	0,040	0,8	2073	0,050	1,1	2434	0,058	1,5	2787	0,067	1,9			
		3,0	1597	0,038	0,9	2082	0,050	1,4	2514	0,060	2,0	2941	0,070	2,6	3368	0,080	3,4			
		3,6	1900	0,045	1,5	2410	0,058	2,2	2901	0,069	3,1	3392	0,081	4,2	3886	0,093	5,3			
144	40	1,8	838	0,020	0,2	1210	0,029	0,3	1584	0,038	0,5	1917	0,046	0,7	2217	0,053	0,9	128	32	36
		2,4	1272	0,030	0,5	1740	0,042	0,8	2145	0,051	1,2	2509	0,060	1,5	2874	0,069	2,0			
		3,0	1674	0,040	1,0	2167	0,052	1,5	2608	0,062	2,1	3051	0,073	2,8	3494	0,083	3,6			
		3,6	1989	0,048	1,6	2512	0,060	2,4	3023	0,072	3,4	3536	0,084	4,5	4050	0,097	5,8			

Table 7 . Flow-adjusted effect table. Heating circuit Δt = 10° C (Water in-out).
For the red values, the flow is below the recommended minimum flow of 0.035 l/s at Δt = 10° C. Increase the flow to the recommended minimum flow.

Sound data

Internal sound dampening ΔL								
Hz	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
dB	22	19	8	6	9	11	15	18

Tabell 8. Polaris S 30, 2,4 m, Ø100 mm, 60 Pa 25 l/s, internal sound dampening.

Weight and water volume

Type	Polaris S 30	Polaris S 60
Weight, kg/m	12	13
Water content, cooling l/m	0.65	0.65
Water content, heating l/m	0.33	0.33
Copper pipes, quality	SS/EN 12449	SS/EN 12449
Pressure class	PN10	PN10

Table 9. Polaris S 60, weight and water volume.

Supply air beam Polaris S

Couplings & connections

Polaris S Supplied in lengths from 1.2 m to 3.6 m in steps of 0.1 m. The connection dimension for the water is 15 mm or 22 mm, and 100 mm (single) or 2x100 mm (double) for the air.

Polaris S is available with a large number of coupling options. This is how to find the designation for the coupling option you require for Polaris S.

NB! Connections C and D have a higher noise value than indicated in the quick selection charts, please check with Lindab.

Step 1
Indicate the position for the ventilation connection.

Step 2
Indicate the position for the pipe connection.

Step 3
Indicate the direction of air injection: L or R.

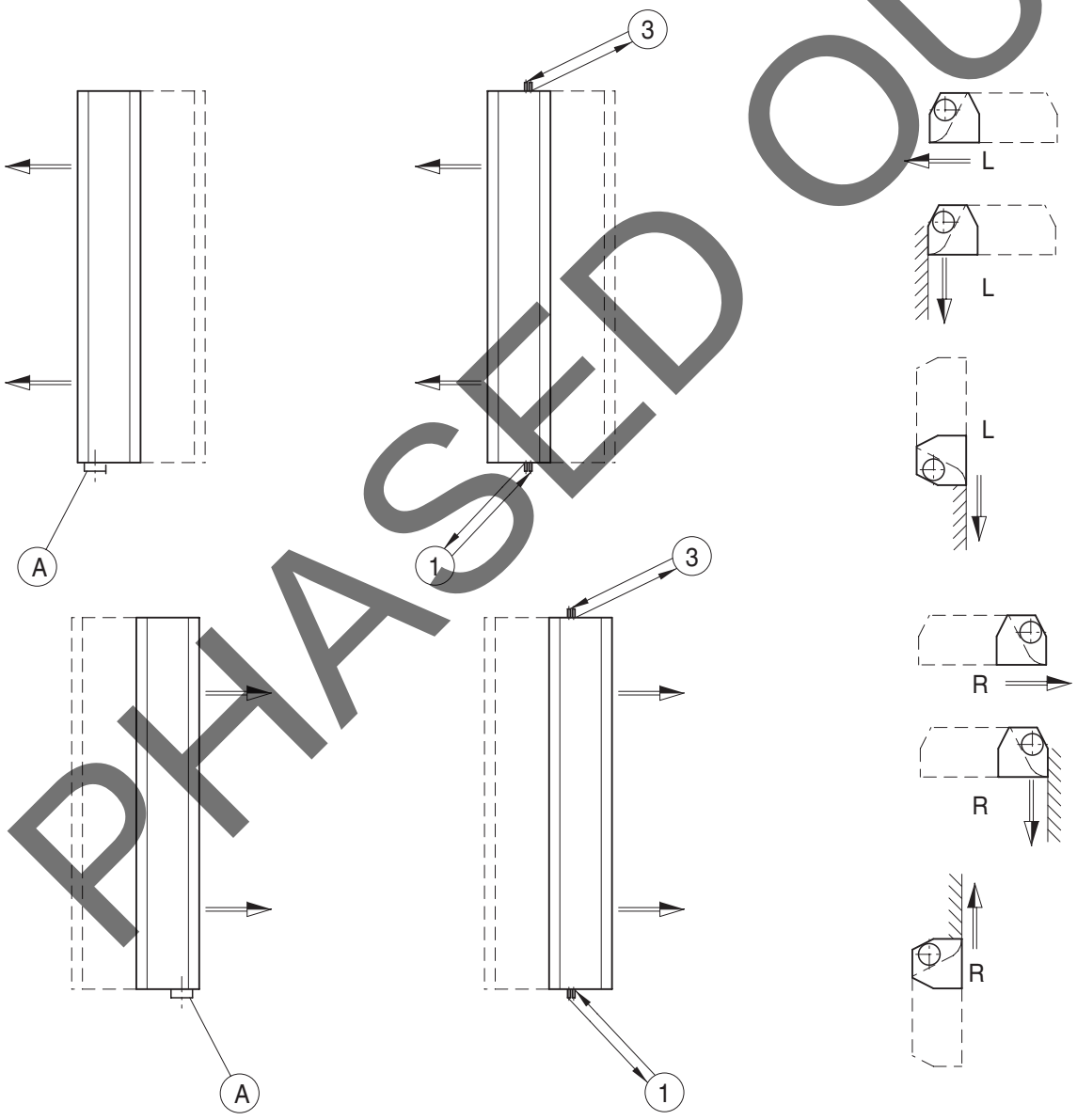


Figure 1. Coupling and connection options.

Supply air beam Polaris S

Couplings & connections

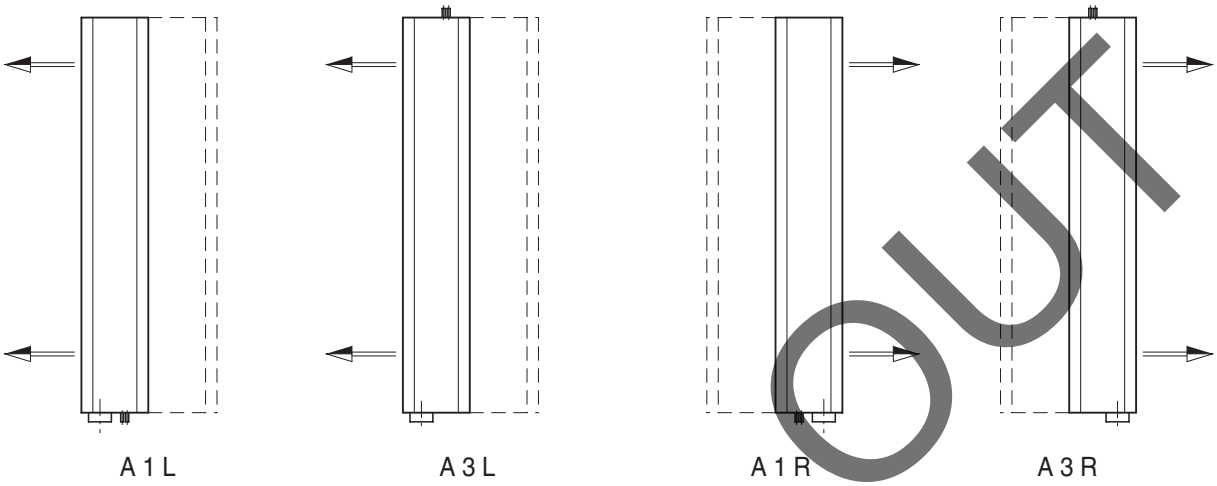


Figure 2. Examples of common coupling options. Type A1L therefore has air connection in the end piece, pipe in the same end piece and the air injection direction is L.

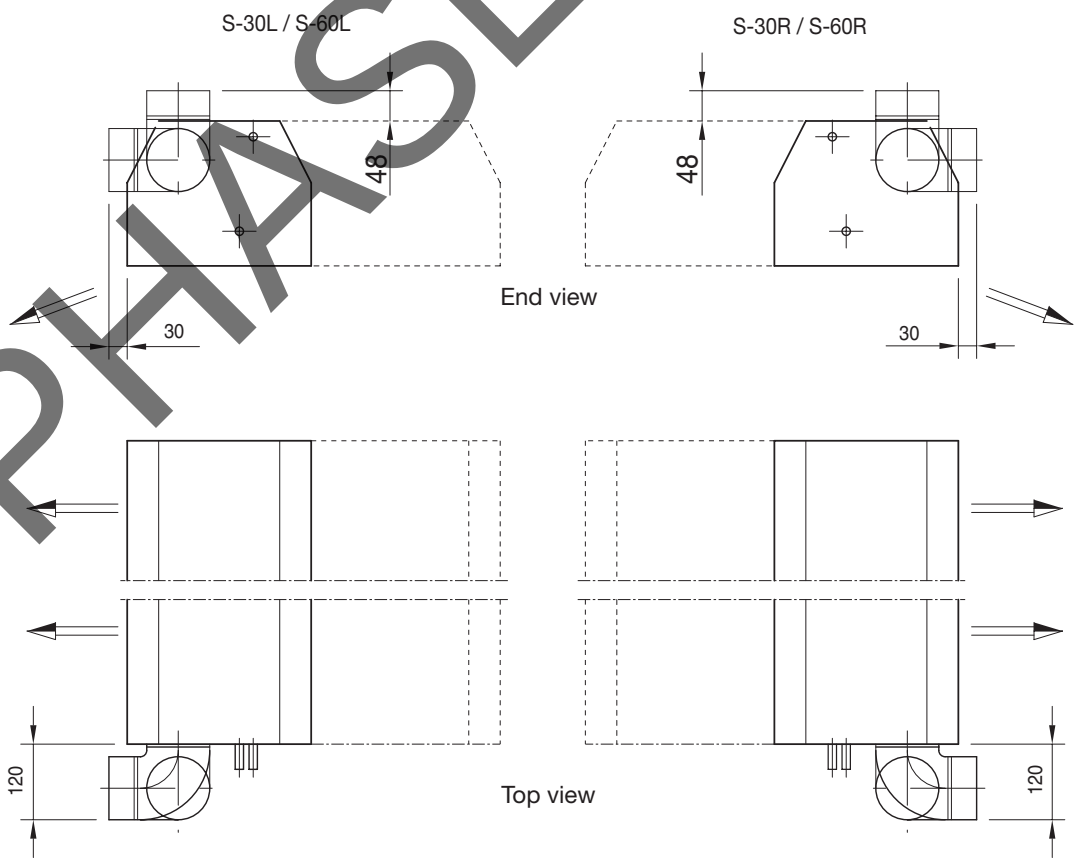
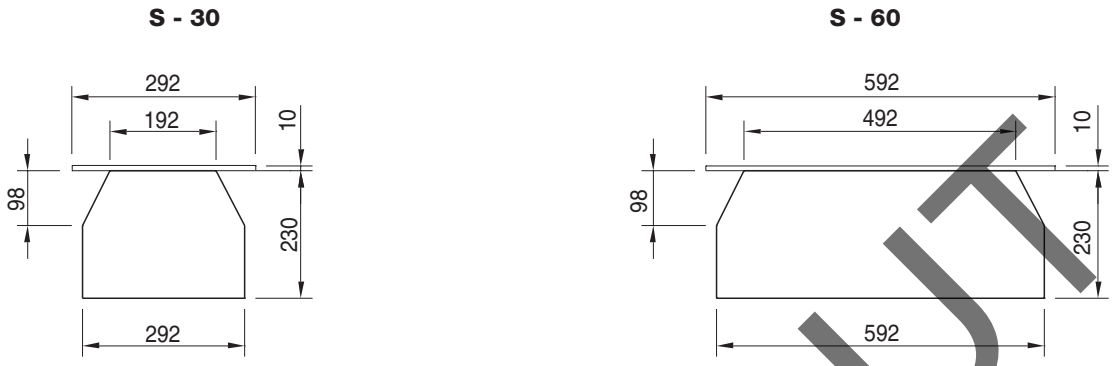


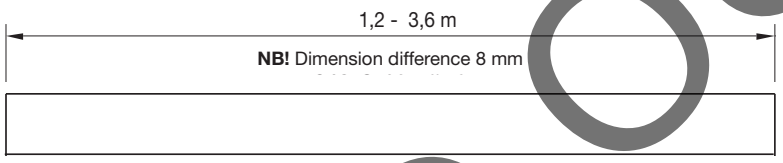
Figure 3. Examples of common coupling options. Type A1L therefore has air connection in the end piece, pipe in the same end piece and the air injection direction is L.

Supply air beam Polaris S

Width & height, mm



Length, m



Dimensions, mm

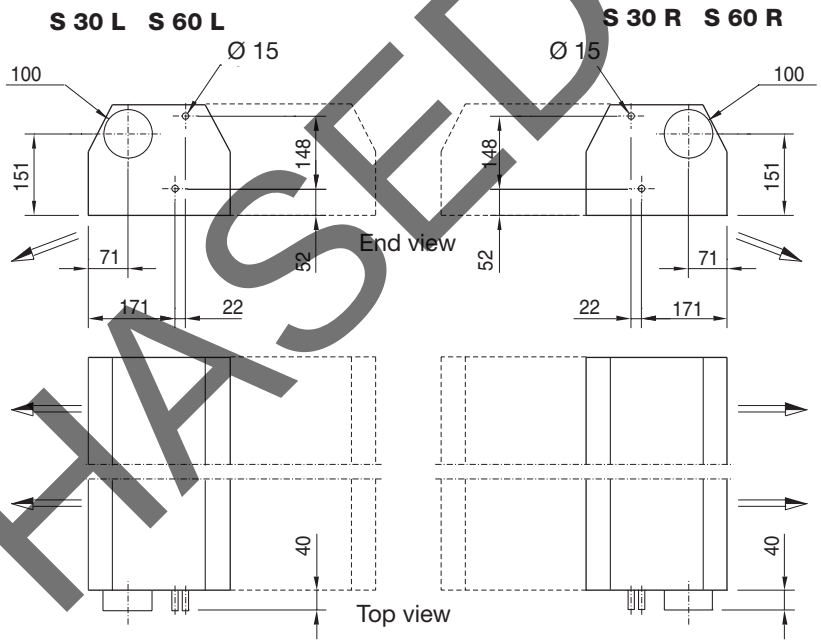


Figure 4. Polaris S - 30 and S - 60, dimensions.

Supply air beam Polaris S

Installation examples

Polaris S is installed recessed in a suspended ceiling. The product can also be built into a wall, which may then require specially adapted components for the installation.

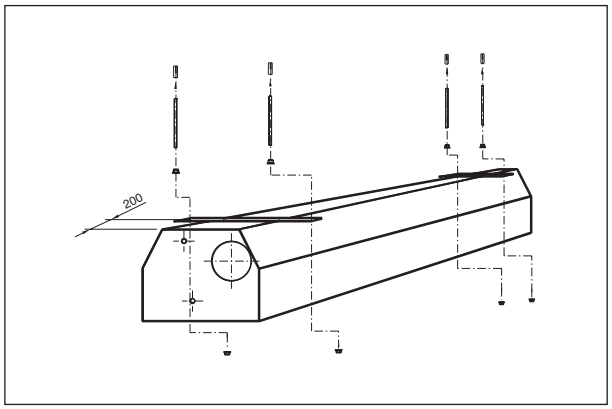


Figure 5. Polaris S-30 installation principle.
NB! Beams longer than 2.6 m, come with a suspension bracket in the middle.

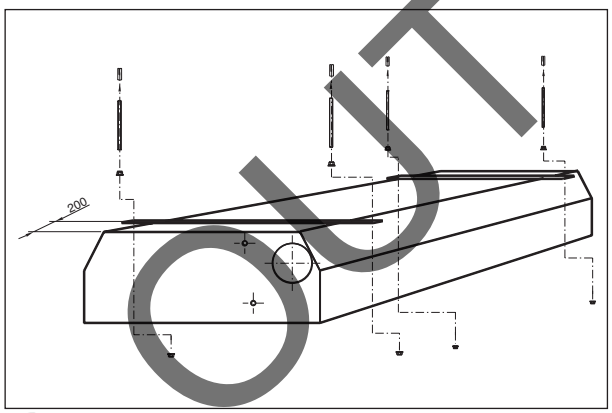


Figure 6. Polaris S-60 installation principle.
NB! Beams longer than 2.6 m, come with a suspension bracket in the middle.

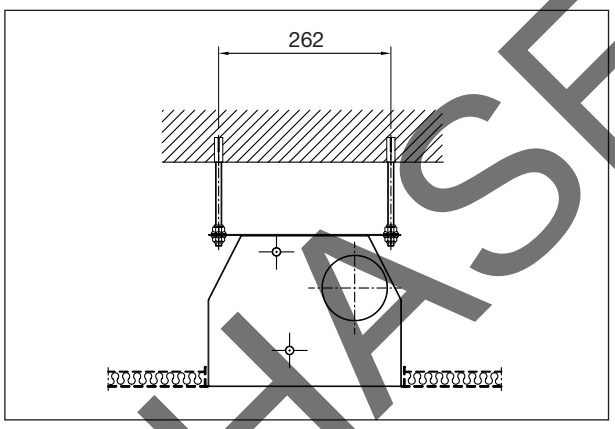


Figure 7. Polaris S-30 recessed mounted in a suspended ceiling.

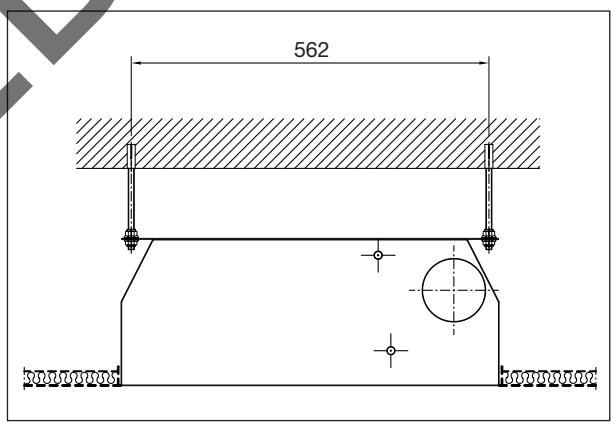


Figure 8. Polaris S-60 recessed mounted in a suspended ceiling.

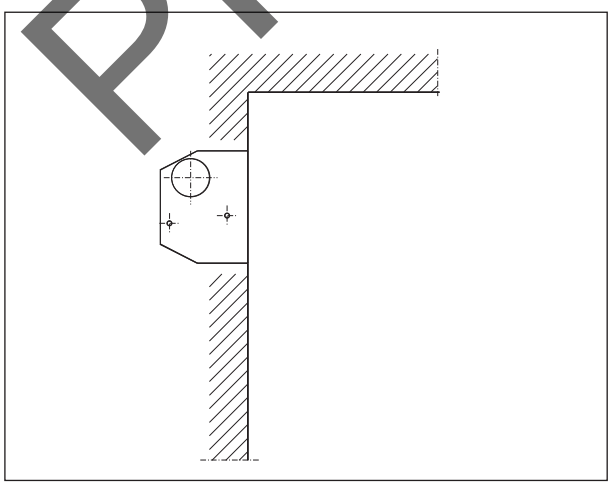


Figure 9. Principle for the wall installation of Polaris S-30.

Supply air beam Polaris S

Distribution diagrams & throw lengths, Polaris S

Polaris S and other induction beams utilise the pressure of the supply air to cause the room air to circulate through the cooling battery. This enables a high cooling capacity, but also creates significant air movements, which often result in long throw lengths. Polaris S is therefore supplied as standard with a diverging (30°) air distribution, which significantly reduces throw lengths and air velocities compared to conventional linear nozzle technology. Depending on the room conditions, Polaris S is also available with a long or a medium distribution profile. Figure 8 shows an example of how the nozzle angle affects the throw length and air velocity.

NB! With a short distribution profile, the distribution pattern for the air becomes wider than the length of the beam. The beams should therefore be placed at a distance of at least 1.8 m from one another.

Calculations for other distances between cooling baffles and for the selection of other air volumes are referred to the Indoor Climate Program

www.lindqst.com/waterborne/calculator/default.aspx

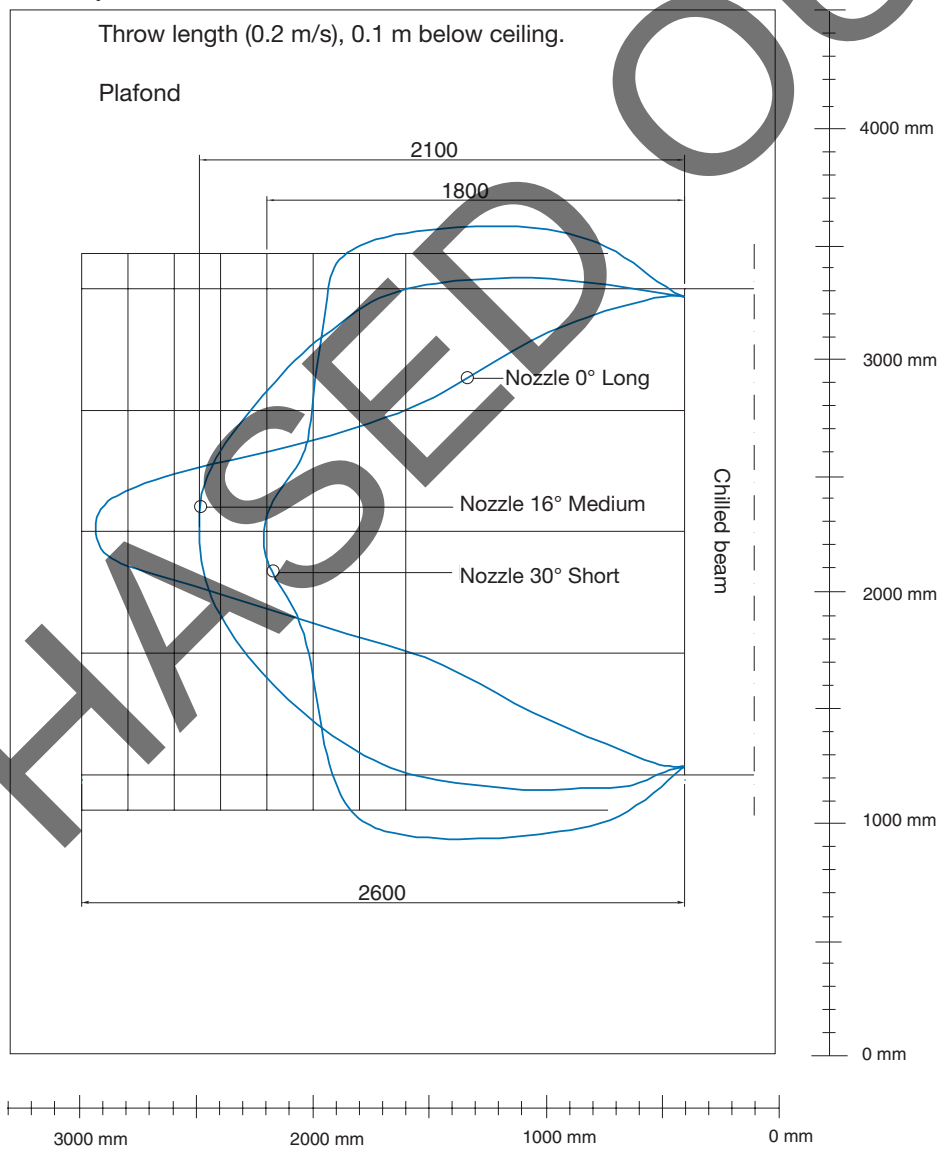
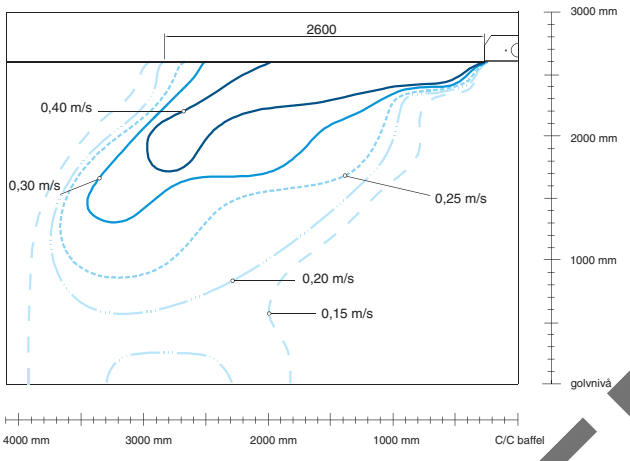


Figure 10. Polaris S distribution profile Short 30°, Medium 16° and Long 0°.

Supply air beam Polaris S

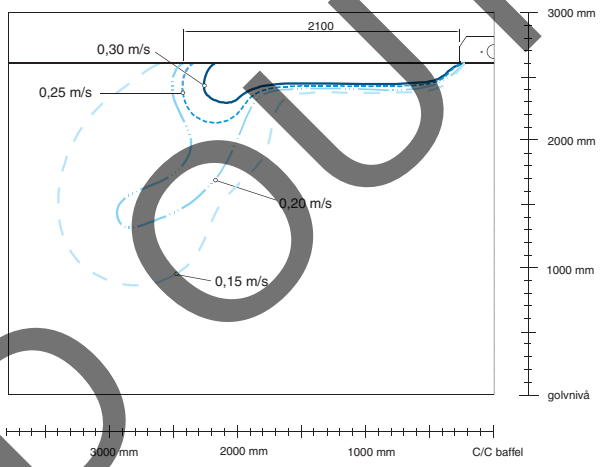
Long distribution profile

Height to the beam's lower edge: 2600 mm.
Airflow: 11 l/s per active metre.
Air duct pressure: 60 Pa.
ΔT room – mean water temperature: 8° C.
ΔT room – supply air temperature: 5° C.
Air velocities with long distribution profile (nozzle angle 0°).



Medium distribution profile

Height to the beam's lower edge: 2600 mm.
Airflow: 11 l/s per active metre.
Air duct pressure: 60 Pa.
ΔT room – mean water temperature: 8° C.
ΔT room – supply air temperature: 5° C.
Air velocities with long distribution profile (nozzle angle 16°).



Short distribution profile

Height to the beam's lower edge: 2600 mm.
Airflow: 11 l/s per active metre.
Air duct pressure: 60 Pa.
ΔT room – mean water temperature: 8° C.
ΔT room – supply air temperature: 5° C.
Air velocities with long distribution profile (nozzle angle 30°).

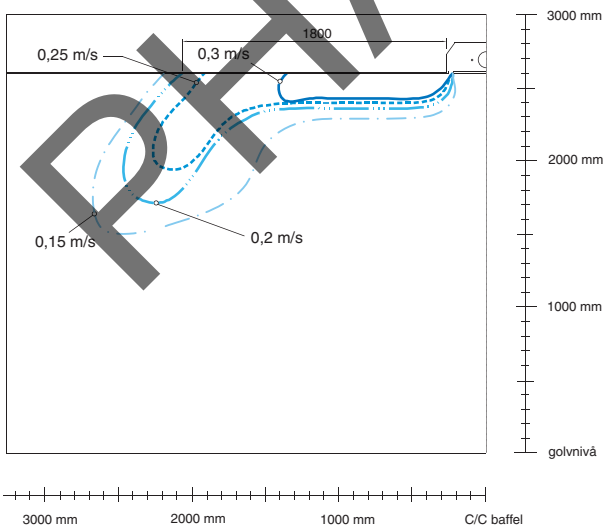


Figure 11-13. Polaris S distribution profiles, Short (30°), Medium (16°) and Long (0°) at an airflow of 11 l/s per active metre and pressure of 60 Pa in the air duct.

Supply air beam Polaris S

Control

Lindab offers control equipment that is very simple to use. To avoid heating and cooling being active at the same time, the systems are controlled sequentially (Regula Combi). For the technical data, refer to the chapter Regula.

Designations

Product/Version:	Polaris S
Width, [cm]:	30 or 60
Connection diam. water, [mm]:	15
Connection diam. air, [mm]:	100
Coupling options:	Air: A
	Water: 1 or 3
	Direction of air injection: L or R
Length, [m]:	Length in metres
Air quantity, [l/s]:	Must always be specified
Nozzle pressure, [Pa]:	Must always be specified
Distribution profile:	Standard (30°)
	Medium (16°)
	Long (0°)
Plus features:	See page 6

Order code

Product	**Polaris**	**S-30**	**15**	**100**	**A1L**	**3.0**	**80**	**40**

Type:
I-60, S-30, S-60

Water connection:
15, 22 mm

Air connection:
I-60: 125, 2x125 (opposite end), 4x100
S-30/60: 100, 2x100 (same end)

Connection type:
I-60: A1, A2, A3, A4, A7, A8, B1, B2, B3, B4, B7, B8, C1, C2, C3, C4, C7, C8, D1, D2, D3, D4, D7, D8
S-30/S-60: A1L, A1R, A3L, A3R

Product length:
1.2 m - 3.6 m (In steps of 0.1 m)

Static nozzle pressure (Pa):

Air volume (l/s):

Programme text

Supply air beams from Lindab	**Qty**
Product:	
Polaris S-60-15-100-A1L-2.4 m	30
Air quantity:	25 l/s
Nozzle pressure:	60 Pa
Distribution profile:	Medium (16°)
Plus features:	
Drypac	
Regula Secura	
Control valve, cooling	
Actuator, cooling	
Accessories:	
Regula Combi:	30
Product:	
Polaris S-30-15-100-A1L-3.0 m	20
Air quantity:	40 l/s
Nozzle pressure:	80 Pa
Distribution profile:	Short (30°)
Plus features:	
Drypac	
Heating	
Regula Secura	
Control valve, cooling	
Actuator, cooling	
Control valve, heating	
Actuator, heating	
Air vent	
Accessories:	
Regula Combi:	20

Good Thinking

At Lindab, good thinking is a philosophy that guides us in everything we do. We have made it our mission to create a healthy indoor climate – and to simplify the construction of sustainable buildings. We do that by designing innovative products and solutions that are easy to use, as well as offering efficient availability and logistics. We are also working on ways to reduce our impact on our environment and climate. We do that by developing methods to produce our solutions using a minimum of energy and natural resources, and by reducing negative effects on the environment. We use steel in our products. It's one of few materials that can be recycled an infinite number of times without losing any of its properties. That means less carbon emissions in nature and less energy wasted.

We simplify construction

Lindab®