



WATER-FED AIR HEATERS



**PRZEDSIĘBIORSTWO PRODUKCJI URZĄDZEŃ
CHŁODNICZYCH TARCZYN SP. Z O.O.**

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LAVA water-fed air heater



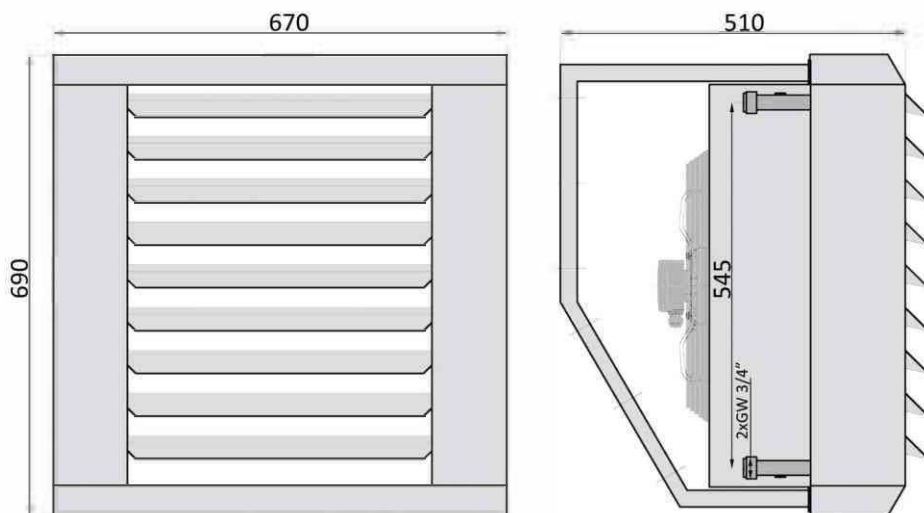
Thanks to the experience of its specialists and designers, PPUCh Tarczyn can offer you the product which combines state-of-the-art technology and high efficiency. The heat exchanger design and appropriately selected fans enable to achieve optimum heating capacity. LAVA heaters satisfy the requests of even the most demanding users. They are mainly used to heat up production halls, warehouses, wholesale stores, sports facilities, workshops, malls, etc.

The units are built with single, double, or triple-row heat exchangers and named LAVA 1, LAVA 2, LAVA 3

Design:

The heat exchangers mounted in the heaters are built with 3/8" internally finned copper tubes mechanically expanded inside aluminium fins which are equipped with flanges covering the whole fin spacing distance, thus ensuring perfect thermal contact. All heat exchangers are tested with 30 bar pressure. Galvanized steel powder-painted casing. The heaters are designed to be mounted vertically or horizontally.

Fan – $\varnothing 350$ – 140W – 1380rpm mounted in the frame with a safety mesh and adjusted to 230V-50Hz power supply.



Air temperature at the inlet [°C]	LAVA 1						LAVA 2						LAVA 3							
	Water temp. inlet/outlet [°C]	Heating capacity [KW]	Air temperature at the outlet [°C]	Water flow m ³ /h	Water pressure drop [kPa]	Water temp. inlet/outlet [°C]	Heating capacity [KW]	Air temperature at the outlet [°C]	Water flow m ³ /h	Water pressure drop [kPa]	Water temp. inlet/outlet [°C]	Heating capacity [KW]	Air temperature at the outlet [°C]	Water flow m ³ /h	Water pressure drop [kPa]	Water temp. inlet/outlet [°C]	Heating capacity [KW]	Air temperature at the outlet [°C]	Water flow m ³ /h	Water pressure drop [kPa]
	0	90/70	22,4	26,7	0,99	15,7	90/70	40,1	47,8	1,77	15	90/70	51,4	61,2	2,27	13,9	90/70	51,4	61,2	2,27
	80/60	19,3	23	0,85	12,1	80/60	34,6	41,3	1,52	11,6	80/60	44,5	53	1,96	10,7	80/60	44,5	53	1,96	10,7
	70/50	16,2	19,3	0,71	8,9	70/50	29,1	34,7	1,27	8,6	70/50	37,5	44,8	1,65	7,9	70/50	37,5	44,8	1,65	7,9
	60/40	13,1	15,6	0,57	6,2	60/40	23,5	28,1	1,03	5,9	60/40	30,4	36,3	1,33	5,5	60/40	30,4	36,3	1,33	5,5
	50/40	12,4	14,8	1,08	20,3	50/40	22,1	26,4	1,93	19,2	50/40	28,3	33,8	2,47	17,7	50/40	28,3	33,8	2,47	17,7
	45/40	12,1	14,4	2,1	70,5	45/40	21,4	25,5	3,72	66,1	45/40	27,2	32,4	4,73	60,3	45/40	27,2	32,4	4,73	60,3
	90/70	21	30	0,93	14	90/70	37,6	49,7	1,66	13,3	90/70	48,2	62,3	2,13	12,3	90/70	48,2	62,3	2,13	12,3
	80/60	17,9	26,3	0,79	10,6	80/60	32,1	43,2	1,41	10,1	80/60	41,3	54,1	1,92	9,3	80/60	41,3	54,1	1,92	9,3
	70/50	14,8	22,6	0,65	7,6	70/50	26,5	36,6	1,16	7,2	70/50	34,3	45,8	1,5	6,7	70/50	34,3	45,8	1,5	6,7
	60/40	11,6	18,8	0,51	5	60/40	20,9	29,9	0,9	4,8	60/40	27,1	37,3	1,19	4,5	60/40	27,1	37,3	1,19	4,5
	50/40	11	18	0,96	16,3	50/40	19,6	28,3	1,7	15,3	50/40	25,1	34,9	2,19	14,1	50/40	25,1	34,9	2,19	14,1
	45/40	10,6	17,7	1,9	55,5	45/40	18,8	27,4	3,27	52	45/40	24	33,6	4,18	47,7	45/40	24	33,6	4,18	47,7
	90/70	19,6	33,3	0,87	12,3	90/70	35,1	51,6	1,55	11,7	90/70	45,1	63,4	1,99	10,9	90/70	45,1	63,4	1,99	10,9
	80/60	16,5	29,6	0,73	9,1	80/60	29,6	45,1	1,3	8,7	80/60	38,1	55,2	1,68	8	80/60	38,1	55,2	1,68	8
	70/50	13,3	25,8	0,58	6,3	70/50	24	38,5	1,05	6	70/50	31,1	46,9	1,36	5,6	70/50	31,1	46,9	1,36	5,6
	60/40	10,1	22	0,44	3,9	60/40	18,3	31,8	0,8	3,8	60/40	23,8	38,2	1,04	3,5	60/40	23,8	38,2	1,04	3,5
	50/40	9,5	21,3	0,83	12,5	50/40	17	30,2	1,48	11,8	50/40	21,9	36	1,91	10,9	50/40	21,9	36	1,91	10,9
	45/40	9,2	21	1,6	42,6	45/40	16,3	29,4	2,84	40	45/40	20,8	34,7	3,6	36,5	45/40	20,8	34,7	3,6	36,5
	90/70	18,2	36,5	0,8	10,7	90/70	32,6	53,5	1,44	10,2	90/70	41,8	64,4	1,85	9,4	90/70	41,8	64,4	1,85	9,4
	80/60	15,1	32,9	0,66	7,7	80/60	27,1	47	1,19	7,4	80/60	34,9	56,2	1,53	6,8	80/60	34,9	56,2	1,53	6,8
	70/50	11,9	29,1	0,52	5,1	70/50	21,5	40,4	0,94	4,9	70/50	27,8	47,8	1,22	4,5	70/50	27,8	47,8	1,22	4,5
	60/40	8,6	25,2	0,38	2,9	60/40	15,6	33,5	0,68	2,8	60/40	20,3	39,1	0,89	2,6	60/40	20,3	39,1	0,89	2,6
	50/40	8,1	24,6	0,71	9,3	50/40	14,4	32,1	1,26	8,8	50/40	18,6	37,1	1,63	8,1	50/40	18,6	37,1	1,63	8,1
	45/40	7,8	24,2	1,36	31,2	45/40	13,8	31,3	2,4	29,1	45/40	17,6	35,8	3,06	26,6	45/40	17,6	35,8	3,06	26,6
	90/70	16,8	39,8	0,74	9,2	90/70	30,1	55,4	1,33	8,8	90/70	38,7	65,5	1,71	8,2	90/70	38,7	65,5	1,71	8,2
	80/60	13,6	36	0,6	6,4	80/60	24,6	48,9	1,08	6,2	80/60	31,7	57,3	1,39	5,7	80/60	31,7	57,3	1,39	5,7
	70/50	10,4	32,3	0,46	4	70/50	18,9	42,2	0,83	3,9	70/50	24,5	48,8	1,07	3,6	70/50	24,5	48,8	1,07	3,6
	60/40	7,1	28,4	0,31	2,1	60/40	12,9	35,2	0,56	2	60/40	16,7	39,7	0,73	1,84	60/40	16,7	39,7	0,73	1,84
	50/40	6,6	27,8	0,58	6,5	50/40	11,9	34	1,04	6,1	50/40	15,3	38	1,33	5,6	50/40	15,3	38	1,33	5,6
	45/40	6,3	27,4	1,1	21	45/40	11,2	33,2	1,95	19,8	45/40	14,3	36,9	2,5	18,2	45/40	14,3	36,9	2,5	18,2

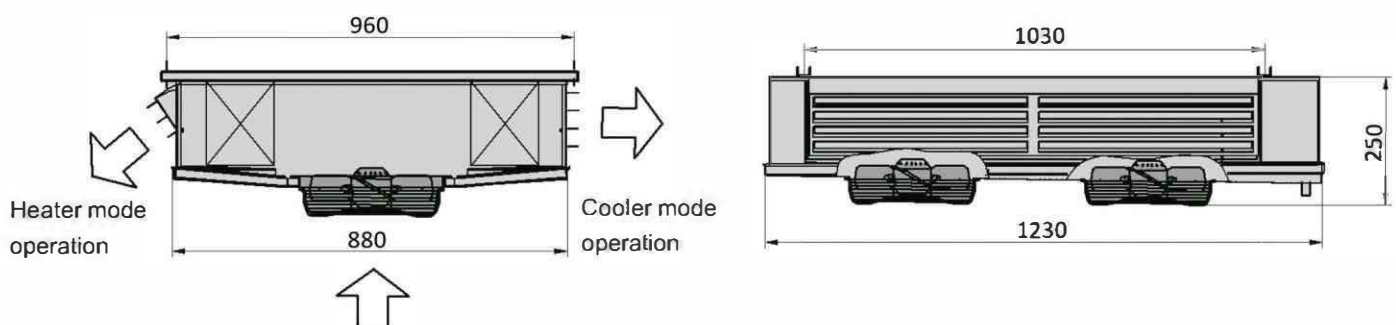
BRYZA water-fed air heater with cooling option



The device is intended to be mounted under the ceiling in rooms up to 4 m high, and to perform the function of air heater and cooler. The air movement induced by two silent fans creates two countercurrent streams directed by adjustable shutters. In the heating mode they are set at 45° and in the cooling mode they are parallel to the ground.

The fans push air onto two Cu-Al fin coil heat exchangers with 3 mm spacing. The casing is made of powder-painted galvanized steel. Connections with Rg7 couplings with 1" internal thread.

Every heat exchanger undergoes a tightness test with 30 bar pressure. The exchangers may be filled with water, glycol, oil, or other non-aggressive liquid.



HEATING

HEATING										
		Water flow - 4m ³ /h Pressure drop 39 kPa			Water flow - 3m ³ /h Pressure drop 24 kPa			Water flow - 2m ³ /h Pressure drop 14 kPa		
Air temp. at the inlet	Water temp. at the inlet	Heating capacity	Air temp. at the outlet	Water temp. at the outlet	Heating capacity	Air temp. at the outlet	Water temp. at the outlet	Heating capacity	Air temp. at the outlet	Water temp. at the outlet
°C	°C	kW	°C	°C	kW	°C	°C	kW	°C	°C
+5	+70	47,2	55,1	59,7	46,0	53,8	56,5	43,6	51,2	50,9
	+60	39,8	47,3	51,3	38,7	46,1	48,7	36,7	43,9	44,0
	+50	32,4	39,4	42,9	31,6	38,5	48,0	29,8	36,7	37,0
+10	+70	43,7	56,3	60,4	42,6	55,0	57,6	43,0	52,7	52,3
	+60	36,3	48,4	52,1	35,3	47,4	49,7	33,4	45,4	45,4
	+50	28,9	40,6	43,7	28,1	39,8	41,8	26,6	38,2	38,4
+15	+70	40,2	57,4	61,2	39,2	56,3	58,6	37,1	54,1	53,8
	+60	32,8	49,6	52,8	31,9	48,7	57,0	30,2	46,9	46,8
	+50	25,4	41,8	44,5	24,7	41,1	42,8	23,4	39,6	39,8
+20	+70	36,6	58,6	62,0	35,7	57,6	59,6	33,8	56,6	55,2
	+60	29,2	50,8	53,6	28,4	49,9	51,7	26,9	48,3	48,2
	+50	21,8	43,0	45,2	21,2	42,4	43,8	20,1	41,1	41,3

COOLING

COOLING										
Air temp. at the inlet, humidity 12g/kg	Water temp. at the inlet	Water flow - 4m ³ /h Pressure drop 47 kPa			Water flow - 3m ³ /h Pressure drop 28 kPa			Water flow - 2m ³ /h Pressure drop 16 kPa		
°C	°C	kW	°C	°C	kW	°C	°C	kW	°C	°C
+27	+5	20,4	14,0	9,4	19,2	14,5	10,5	17,1	15,4	12,3
+32		23,8	15,1	10,1	22,4	15,7	11,4	20,0	16,6	13,6
+35		25,9	15,8	10,5	24,4	16,4	18,0	21,8	17,4	14,4
+40		29,1	16,8	11,2	27,5	17,5	12,9	24,8	18,6	15,6

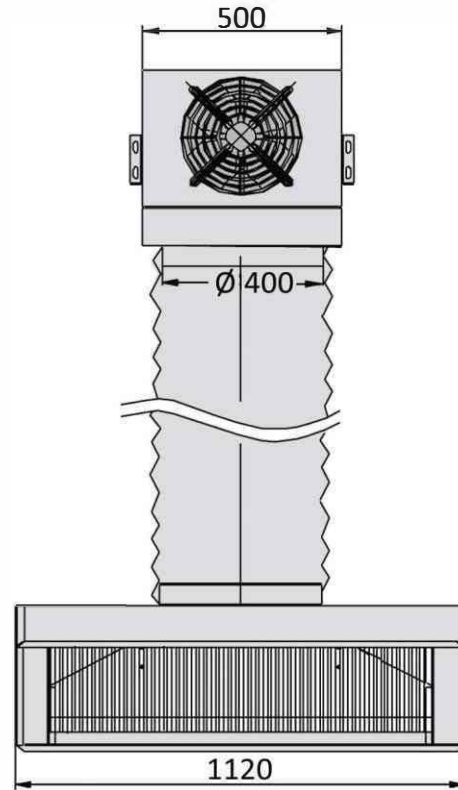
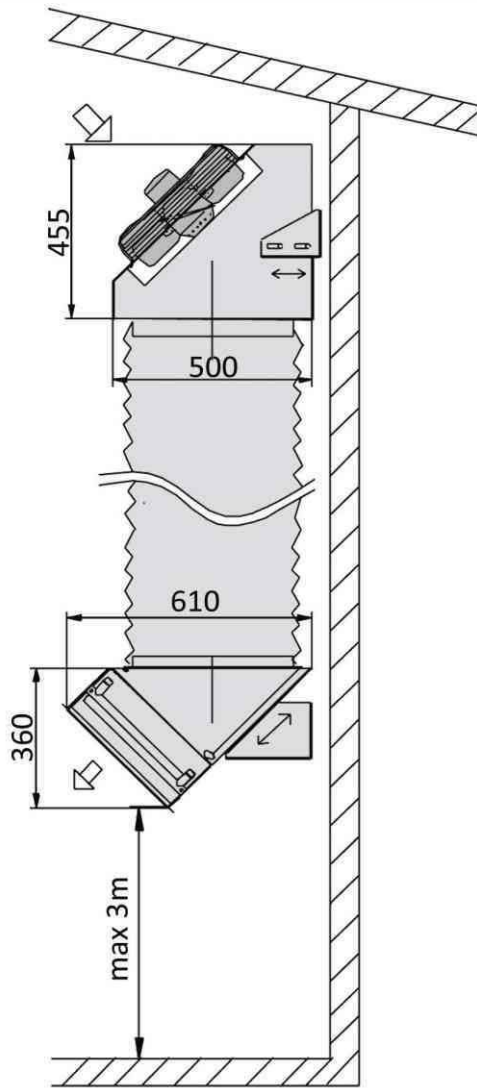
Fan ø300 – 2 pcs	Capacity	m ³ /h	2 x 1400 = 2800
	Power consumption - 230V	W	2 x 86 = 172
Water volume		dcm ³	5
Weight		kg	40
Connections (internally threaded coupling)		inch	1"

CYKLON water-fed air heater



CYKLON water-fed air heater, apart from heating, also performs the function of equalizing temperatures under the ceilings of halls and in the working areas. Thanks to high efficiency of the heat exchanger and drawing the heat from the upper part of the hall, thermal comfort in the working areas can be achieved at a very low cost. The profits from using the heater can be seen in facilities over 4 m high. The casing is made with powder-painted galvanized steel. The assembly is easy thanks to small weight and size.

CYKLON water-fed air heater



Air temp. at the inlet	Intensive water flow					Moderate water flow				
	Water temp. inlet/outlet	Heating capacity	Air temp. at the outlet	Water flow	Water pressure drop	Water temp. inlet/outlet	Heating capacity	Air temp. at the outlet	Water flow	Water pressure drop
[°C]	[°C]	[KW]	[°C]	[m³/h]	[kPa]	[°C]	[KW]	[°C]	[m³/h]	[kPa]
+15	90/75	46,1	55,1	2,72	30,8	90/70	43,6	52,9	1,92	16
	80/65	38,7	48,7	2,27	22,3	80/60	36,1	46,4	1,59	11,3
	70/55	31,3	42,3	1,83	15	70/50	28,5	39,8	1,25	7,3
+20	90/75	42,7	57	2,52	26,6	90/70	40,2	54,8	1,77	13,7
	80/65	35,3	50,6	2,07	18,7	80/60	32,7	48,3	1,44	9,3
	70/55	27,9	44,2	1,63	12,1	70/50	24,9	41,6	1,09	5,7
+25	90/75	39,3	59	2,32	22,7	90/70	36,8	56,7	1,62	11,6
	80/65	31,9	52,5	1,87	15,4	80/60	29,2	50,2	1,28	7,5
	70/55	24,4	46	1,43	9,4	70/50	21,3	43,4	0,93	4,2
+30	90/75	35,8	60,9	2,11	19	90/70	33,2	58,6	1,47	9,6
	80/65	28,4	54,5	1,67	12,3	80/60	25,6	52	1,12	5,9
	70/55	20,8	47,9	1,21	6,9	70/50	17,5	45,1	0,76	2,9

FALA water-fed air heater



General information

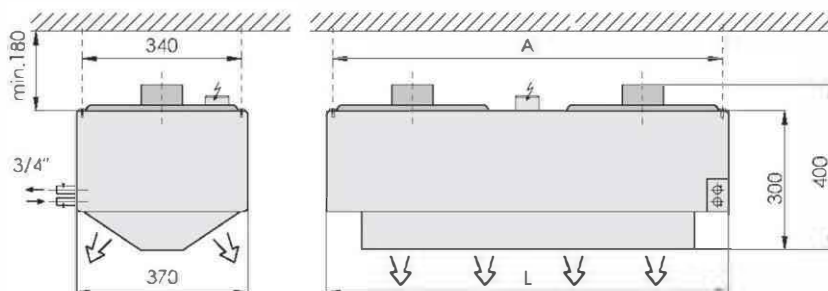
"FALA" heaters are dedicated to air heating in industrial facilities. The heaters are mounted under the ceiling, up to 6 m high. The heater fans direct warm air downwards, obliquely, not allowing warm air to be trapped in the upper part of the room. The heater is equipped with a block of copper tubes with aluminium fins. Fin spacing is approximately 3 mm. The casing is made of white, powder-painted galvanized steel sheets. Service valves are soldered into inlet and outlet connections. The Cu/Al fin coil undergoes a tightness test with 25 bar pressure.

The heater is mounted with 4 bars in fixed M8 threaded inserts. Water should be fed to the lower 3/4" connection, the upper connection is the outlet.

It is possible to order customized heaters with increased resistance to the negative impact of air:

- stainless steel casing
- Cu/Cu fin coil, chemically protected

Technical data



Type		FALA - 1						FALA - 2					
Water temperature inlet/outlet [°C]		90/70		80/60		70/50		90/70		80/60		70/50	
Air temp. at the inlet [°C]		0	+15	0	+15	0	+15	0	+15	0	+15	0	+15
Heating capacity in [kW]		17,6	14,1	15,1	11,6	12,6	9,1	35,4	28,3	30,3	23,2	25,2	18,1
Air temp. at the outlet [°C]		39,8	46,9	34,1	41,2	28,4	35,4	39,8	46,9	34,1	41,2	28,4	35,4
Water flow	[m³/h]	0,8	0,62	0,66	0,51	0,55	0,39	1,55	1,24	1,33	1,02	1,10	0,79
	[dcm³/min]	13,3	10,4	11,1	8,5	9,2	6,6	26,0	20,8	22,2	17,0	18,3	13,3
Water pressure drop [kPa]		14,7	9,5	10,8	6,5	7,6	4,0	12,5	8,1	9,2	5,5	6,5	3,4
Water volume [dcm³]		1,0						1,7					
Fan ø300 230V	Capacity [m³/h]	1330						2660					
	Power [W]	1 x 120						2 x 120					
Weight [kg]		15						25					
Dimensions	A [mm]	500						900					
	L [mm]	530						930					