

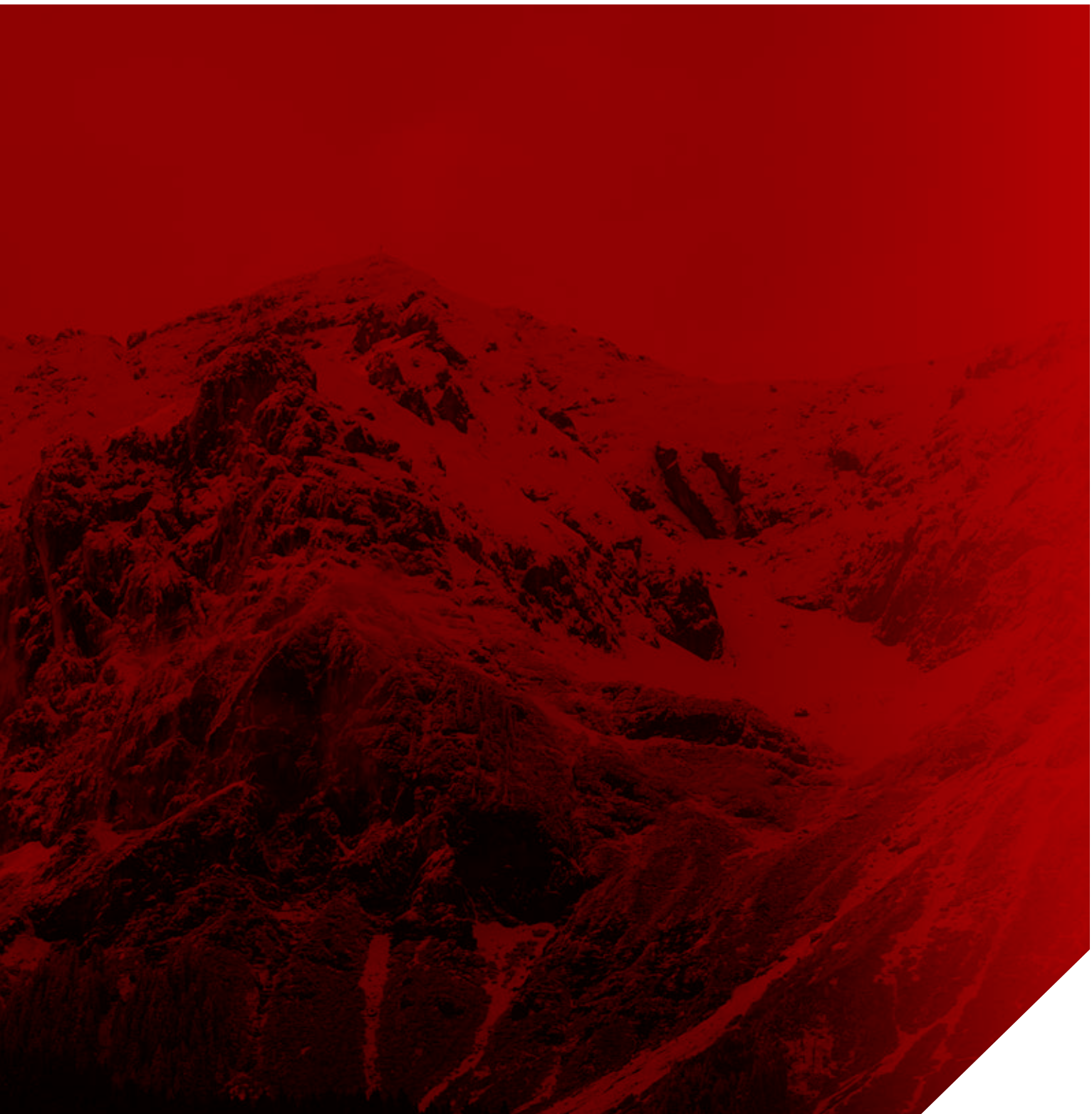
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CLIMATE DESIGNERS

Heating



KNOCKONWOOD FREESTANDING DBE TECHNICAL INFORMATION



KNOCKONWOOD DBE FREESTANDING CORRECTION FACTORS

**AVERAGE CORRECTION FACTORS
ACCORDING TO EN442 - 75/65/20°C**



Tv	Tl	Tr	25	30	35	40	45	50	55	60	65	70	75	80	85
90	18		0.56	0.67	0.76	0.84	0.92	0.99	1.05	1.11	1.17	1.24	1.29	1.34	1.39
	20		0.49	0.62	0.71	0.80	0.87	0.94	1.01	1.07	1.13	1.20	1.25	1.30	1.35
	22		0.42	0.56	0.66	0.75	0.83	0.90	0.97	1.03	1.09	1.16	1.21	1.26	1.31
	24		0.31	0.50	0.61	0.71	0.79	0.86	0.93	0.99	1.05	1.11	1.17	1.22	1.27
85	18		0.53	0.64	0.73	0.81	0.88	0.95	1.01	1.07	1.14	1.19	1.24	1.29	
	20		0.47	0.59	0.68	0.76	0.84	0.91	0.97	1.03	1.09	1.15	1.20	1.25	
	22		0.39	0.53	0.63	0.72	0.79	0.86	0.93	0.99	1.05	1.11	1.16	1.21	
	24		0.29	0.47	0.58	0.67	0.75	0.82	0.89	0.95	1.01	1.07	1.12	1.17	
80	18		0.50	0.61	0.70	0.77	0.84	0.91	0.97	1.03	1.09	1.14	1.19		
	20		0.44	0.56	0.65	0.73	0.80	0.87	0.93	0.99	1.05	1.10	1.15		
	22		0.37	0.50	0.60	0.68	0.76	0.82	0.89	0.95	1.01	1.06	1.11		
	24		0.27	0.45	0.55	0.64	0.71	0.78	0.85	0.91	0.97	1.02	1.07		
75	18		0.48	0.58	0.66	0.74	0.80	0.87	0.93	0.99	1.04	1.09			
	20		0.42	0.53	0.62	0.69	0.76	0.82	0.88	0.95	1.00	1.05			
	22		0.35	0.48	0.57	0.65	0.72	0.78	0.84	0.91	0.96	1.01			
	24		0.25	0.42	0.52	0.60	0.68	0.74	0.80	0.87	0.92	0.97			
70	18		0.45	0.55	0.63	0.70	0.76	0.82	0.89	0.94	0.99				
	20		0.39	0.50	0.58	0.65	0.72	0.78	0.85	0.90	0.95				
	22		0.32	0.45	0.54	0.61	0.68	0.74	0.80	0.86	0.91				
	24		0.24	0.39	0.49	0.57	0.64	0.70	0.76	0.82	0.87				
65	18		0.42	0.51	0.59	0.66	0.72	0.78	0.84	0.89					
	20		0.36	0.47	0.55	0.62	0.68	0.74	0.80	0.85					
	22		0.30	0.42	0.50	0.57	0.64	0.70	0.76	0.81					
	24		0.22	0.36	0.46	0.53	0.60	0.66	0.72	0.77					
60	18		0.39	0.48	0.55	0.62	0.68	0.74	0.79						
	20		0.34	0.43	0.51	0.58	0.64	0.70	0.75						
	22		0.28	0.39	0.47	0.54	0.60	0.66	0.71						
	24		0.20	0.33	0.42	0.49	0.56	0.62	0.67						
55	18		0.36	0.44	0.51	0.58	0.64	0.69							
	20		0.31	0.40	0.47	0.54	0.60	0.65							
	22		0.25	0.35	0.43	0.49	0.55	0.61							
	24		0.17	0.30	0.39	0.45	0.51	0.57							
50	18		0.33	0.41	0.47	0.53	0.59								
	20		0.28	0.36	0.43	0.49	0.55								
	22		0.22	0.32	0.39	0.45	0.51								
	24		0.15	0.27	0.35	0.41	0.47								
45	18		0.30	0.37	0.43	0.49									
	20		0.25	0.33	0.39	0.45									
	22		0.20	0.28	0.35	0.41									
	24		0.13	0.24	0.31	0.37									
40	18		0.26	0.33	0.39										
	20		0.22	0.29	0.35										
	22		0.17	0.25	0.31										
	24		0.11	0.20	0.27										
35	18		0.23	0.29											
	20		0.18	0.25											
	22		0.14	0.21											
	24		0.08	0.16											
30	18		0.19												
	20		0.14												
	22		0.10												
	24		0.06												

The indicated outputs with ΔT 50 and ΔT 60 are the exact outputs. ΔT 50 output measured in accordance with EN 442 and ΔT 60 output calculated according to EN 442. An average correction factor is given in this table for all other ΔT outputs, applicable for all dimensions.

KNOCKONWOOD DBE FREESTANDING CORRECTION FACTORS SOUND



Using DBE:
max. flow temperature 75°C
max. air humidity 95% R.H.

number of units	NOISE PRESSURE COMFORT dB(A)						MAX. MEASURED POWER (Watts)					
	1	2	3	4	5	6	1	2	3	4	5	6
DBEU.10	29.0	32.0	33.8	35.0	36.0	36.8	2.8	5.6	8.4	11.2	14	16.8
DBEU.15	27.0	30.0	31.8	33.0	34.0	34.8	2.2	4.4	6.6	8.8	11	13.2

NOISE PRESSURE 1 UNIT dB(A)		
Type	Comfort	Boost
DBEU.10	29	35
DBEU.15	27	31

Reverberation time RT60 0.6 s
reference room V₁ 80m³
Reference pressure P₀ 2.10⁻⁵Pa

SEVERAL APPLIANCES WITH AN EQUAL SOUND LEVEL IN A ROOM	
number [dB(A)]	Correction [dB(A)]
2	+ 3.0
3	+ 4.8

$P_2 = P_1 + 10 \log n$
P₁ = sound level one appliance
P₂ = sound pressure to be calculated
n = number of appliances

ROOM VOLUME	
Content m ³	Correction [dB(A)]
80	0
150	- 2.7
200	- 4.0
250	- 4.9
300	- 5.7
350	- 6.4
400	- 7.0
500	- 8.0
600	- 8.8

Calculation of sound pressure for other room
content

$$P_2 = P_1 - 10 \log \frac{V_2}{V_1}$$
P₁ = table of sound pressure
P₂ = sound pressure to be calculated
V₁ = size of reference room (80 m³)
V₂ = room size

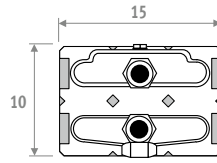
REVERBERATION TIME	
Reverberation time (c) T2	Correction [dB(A)]
2.5	+ 6.2
2.0	+ 5.2
1.5	+ 4.0
1.0	+ 2.2

$$P_2 = P_1 - 10 \log \frac{T_2}{T_1}$$
P₁ = table of sound pressure
P₂ = sound pressure to be calculated
T₁ = reverberation time of room of
reference (T₁ = 0.6 s)
T₂ = reverberation time of room

KNOCKONWOOD DBE FREESTANDING HEAT EXCHANGER



Weight and water content without packaging or options.

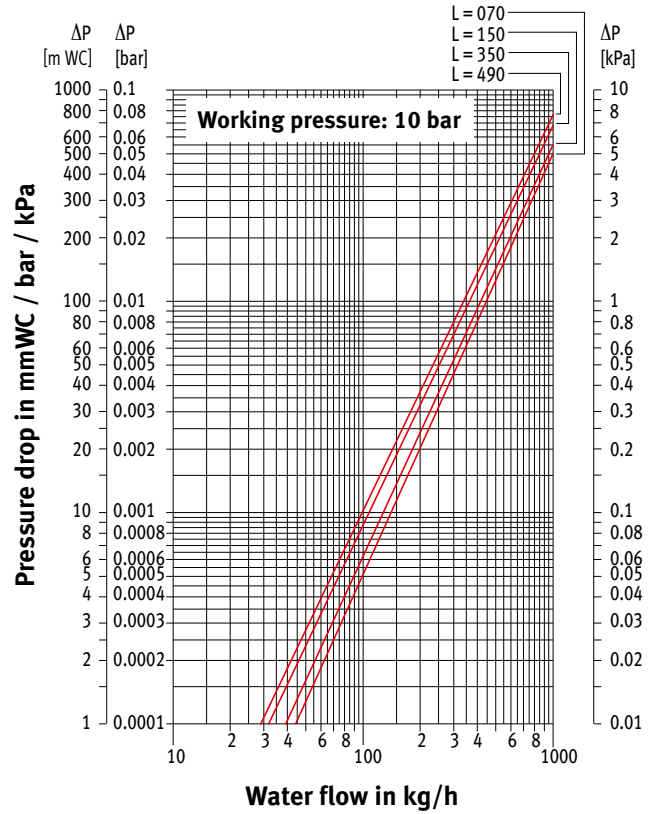


Type 15

WEIGHT (IN KG/METRE)	
L	H 21
110	18.0
130	21.0
170	24.0
210	27.0

WATER CONTENT IN LITRES	
L	H 21
110	1.08
130	1.28
170	1.67
210	2.06

PRESSURE DROP TYPE 15



RECOMMENDED MAXIMUM WATER FLOW DEPENDING ON THE PIPE DIAMETER AT A MAX. WATER FLOW OF 0.4 M / S

Tube	Outer Ø	Wall thickness	Maximum flow	Maximum power at ΔT (° C) (T supply - T return))				
				ΔT 2	ΔT 5	ΔT 10	ΔT 20	ΔT 30
				Watt	Watt	Watt	Watt	Watt
	mm	mm	kg/h					
10/1	10.0	1.0	72	168	421	841	1682	2524
12/1	12.0	1.0	113	263	657	1314	2629	3943
12/2	12.0	2.0	72	168	421	841	1682	2524
14/1	14.0	1.0	163	379	946	1893	3785	5678
14/2	14.0	2.0	113	263	657	1314	2629	3943
15/1	15.0	1.0	191	444	1111	2221	4443	6664
16/1	16.0	1.0	222	515	1288	2576	5152	7729
16/1.5	16.0	1.5	191	444	1111	2221	4443	6664
16/2	16.0	2.0	163	379	946	1893	3785	5678
16/2.2	16.0	2.2	152	354	884	1769	3537	5306
17/2	17.0	2.0	191	444	1111	2221	4443	6664
3/8"	17.1	3.2	129	301	752	1505	3010	4515
18/1	18.0	1.0	289	673	1682	3365	6730	10095
18/2	18.0	2.0	222	515	1288	2576	5152	7729
20/2	20.0	2.0	289	673	1682	3365	6730	10095
1/2"	21.3	3.7	217	504	1259	2518	5035	7553
26/3	26.0	3.0	452	1052	2629	5258	10515	15773

jaga

CLIMATE DESIGNERS

jaga
QUALITY
MADE IN BELGIUM

Jaga International
Verbindingslaan 16
B-3590 Diepenbeek

Tel.: +32 (0)11 29 41 12
Fax: +32 (0)11 29 41 60
export@jaga.com

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