Description

Hoval Thermalia®
Hoval Thermalia® H
Brine/water-water/water heat pump

- Compact brine/water-water/water heat pump
- Compact unit with high energy efficiency. Extremely low-noise with triple-mounted construction.
- Stable framework of galvanised sheet steel; with removable, powder-coated, sound-insulated side panels, colour brown red (RAL 3011)
- Sound-insulated plastic hood, colour flame red (RAL 3000)
- Heating regulator TopTronic® T/UWP integrated
- Operation from front attractive switching field display of controller messages
- Heating circuit temperatures available
- Temperatures and pressures of brine circuit and refrigeration cycle available
- Sensor set (outside, contact and hot water sensor) included
- Safety valve incl. hose installed at the side of the heating
- Comprising a spiral (Scroll) compressor
- Plate heat exchanger system of stainless steel
- Electronic starting current limiter with rotary
- field/phase monitoring.
- Integrated heating and brine pump of energy classification A
- 3-way switch ball valve for heating and hot water
- Integrated brine pressure sensor/monitor
- Brine pressure gauge and pressure valve incl. hose
- Brine expansion vessel 18 litres and brine filling station
- Hydraulic connections with flexible hoses 1″, removable from left, right or from above.
- Sound-insulating floor mat
- Refrigerant
  Type (6-15) with R407C
  Type H (6-15) with R134a
- Heat pump wired ready for installation inside the building.

Electrical connections
Electrical connection selectable between lateral (left/right) or top

Heat pump control
TopTronic® T/UWP
- Regulation function integrated for:
  - 1 mixer circuit
  - 1 heating circuit without mixer
  - domestic hot water loading circuit
- Function extension possibility via different key modules.
- Main switch “I/O”
- Safety temperature limiter
- Fuse 6.3 A
- Trouble indication heat pump
- Running time meter and counter
- Sensor set for heat pump with outside, cable and contact sensor
- Large LCD display

Delivery
Heat pump on pallet, plastic hood and floor plate separately packed. Hose sleeves, clamps and sensor set included separately.

Thermalia®, Thermalia® H

Type	Refrigerant	Max. flow °C	Nominal heat output B0W35/W10W35 kW	
(6)	R407C	62	6.1	8.4
(8)	R407C	62	8.3	11.4
(10)	R407C	62	10.6	14.6
(12)	R407C	62	12.2	16.8
(15)	R407C	62	14.5	19.9
H (6)	R134a	67	3.7	5.1
H (8)	R134a	67	5.2	7.3
H (10)	R134a	67	6.6	9.3
H (15)	R134a	67	9.3	13.0

European Quality Label for Heat Pumps
ehpa

Authorisations
Switzerland/Germany/Austria

Thermalia®	(8)	test No. WPZ	SW [1]-279-11-02
Thermalia®	H (8)	test No. WPZ	SW [1]-286-11-03
Thermalia®	(15)	test No. WPZ	SW [1]-287-11-04
Thermalia®	H (15)	test No. WPZ	SW [1]-288-11-05
Thermalia®	(8)	test No. WPZ	WW [2]-143-11-02
Thermalia®	H (8)	test No. WPZ	WW [2]-144-11-03
Thermalia®	(15)	test No. WPZ	WW [2]-146-11-04
Thermalia®	H (15)	test No. WPZ	WW [2]-147-11-05

Examined by heat pump testing centre (WPZ)
The Thermalia® (6-15) or H (6-15) series is certified by the seal of approval of the authorisation commission of Switzerland

[1] Brine (salt water)/water
[2] Water/water

Optional
- Drive motor for 3-way switch ball valve with flexible hose 1″
- internet connection

Part No.

Brine/water-water/water heat pump Hoval Thermalia® — **Part No.**

Brine/water-water/water heat pump with hermetic spiral (scroll) compressor. Comprising an integrated heating regulator TopTronic® T/UWP and flexible connection pipes (not withstanding low pressure). Compact unit, pre-wired and ready for installation inside the building.

Hoval Thermalia®

Refrigerant R407c
Flow temperature max. 62 °C

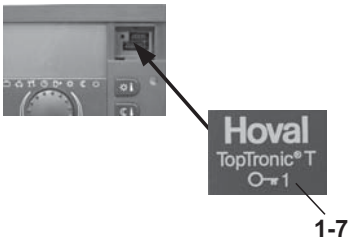
Type	Heat output B0W35/W10W35 kW		
(6)	6.1	8.4	7007 621
(8)	8.3	11.4	7007 622
(10)	10.6	14.6	7007 623
(12)	12.2	16.8	7007 624
(15)	14.5	19.9	7007 625

Hoval Thermalia® H

Refrigerant R134a
Flow temperature max. 67 °C

Type	Heat output B0W35/W10W35 kW		
(6)	3.7	5.1	7007 629
(8)	5.2	7.3	7007 630
(10)	6.6	9.3	7007 631
(15)	9.3	13.0	7007 632

■ **Part No.**



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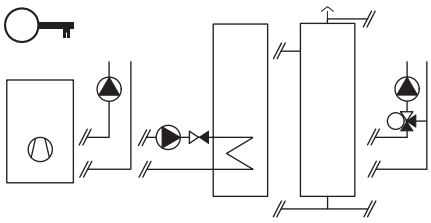


Accessories for heating regulation system TopTronic® T

Part No.

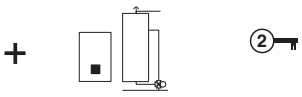
Key modules for Hoval TopTronic® T
for further functions additionally
to standard functions.
Key module consisting of:
function key for plugging into TopTronic® T
incl. accessories
Only one key module is possible!

Standard functions
already included in TopTronic® T.
- 1 mixing circuit
- 1 heating circuit without mixing operation
- domestic hot water loading circuit

Functions of the key modules

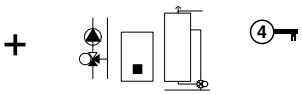
Key-module	2nd mixing circuit	solid-fuel-storage tank	solar bi-fuel
①	●		
②		●	
③			●
④	●	●	
⑤	●		●
⑥		●	●
⑦	●	●	●

Key module 1 6012 154
for 2nd mixing circuit
Function 1, 1 flow sensor, 2 loose plugs



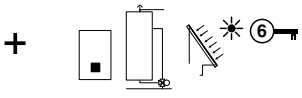
Key module 2 6012 155
for solid fuel/storage tank/bivalent installation
Function key 2, 3 immersion sensors, 4 loose plugs

Key module 3 6012 156
for solar plants
Function key 3, 1 collector sensor, 1 calorifier sensor, 4 loose plugs

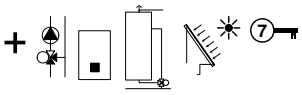


Key module 4 6012 157
for 2nd mixing circuit and solid fuel/storage tank/ bivalent installation
Function key 4, 1 flow sensor, 3 immersion sensors, 6 loose plugs.

Key module 5 6012 158
for 2nd mixing circuit and solar plants
Function key 5, 1 flow sensor, 1 collector sensor, 1 calorifier sensor, 6 loose plugs



Key module 6 6012 159
for solid fuel/storage tank/bivalent installation and solar plants
Function key 6, 1 collector sensor, 4 immersion sensor, 6 loose plugs.



Key module 7 6012 160
for 2nd mixing circuit, solid fuel/storage tank/ bivalent installation and solar plants
Function key 7, 1 flow sensor, 1 collector sensor, 4 immersion sensors, 8 loose plugs

Sensor type
Immersion-/calorifier sensor : Type KVT20/5/6 (L = 5 m) without immersion sleeve
flow sensor Type VF204S with plug
Collector sensor Type PT1000 (Silicone)

System solutions and applications
see Hoval CD

■ **Part No.**

	Accessories	Part No.
	**Room station RS-T** for TopTronic® T effective on one mixing circuit	2034 939
	**Remote control RFF-T** for TopTronic® T effective on one mixing circuit	2022 239
	**Outdoor sensor AF 200** (may be included in the heat generator scope of delivery) for one mixing circuit or for the mean value (per regulator 2 outdoor temperature sensors possible)	2022 995
	**Cable sensor KVT 20/5/6** with 5 m cable	2022 992
	**Contact sensor VF202K** usable as flow or return sensor. with 2 m cable and plug	6012 595
	**Contact sensor VF204S** can be used as flow or return flow sensor with 4 m cable and plug	6012 688
	**Protective pipe immersion sleeve SB280 ½″** brass nickel-plated PN10 - 280 mm	2018 837
	**Solar temperature sensor PT 1000** silicone sensor, can be used as collector/calorifier sensor L = 2.5 m max. permissible temperature 240 °C (included in key module Solar)	2022 990

Accessories for water heating

	**Hot water set** for Thermalia® (6-15) Consisting of: Motor drive LRA 230A for integrated switching valve and flexible connecting hose 1″	6026 251

■ **Part No.**

	Accessories for water heating	Part No.
	**Sludge separator with magnetic ring Dirtmag 25 - 1″** Casing, lid and interior elements made from HDPE plastic Temperature range 0 - 90 °C Max. operating pressure: 3 bar Max. glycol fraction: 30% manual air-bleeding	2054 376
	**Screw-in electrical heating inset EP-3** 3 kW, for plants with technical storage tank. As «emergency» heating with heat source underground for monovalent plants.	2022 216
	**Electric flow heater 3 kW** for plants without techn. storage tank Installation in the flow Connection intake: 1½″ external thread Connection outlet: 1¼″ inner thread	6019 173
	Circulating pumps, controlling elements, energy storage tank see separate brochures	
	Necessary at boiler room temperatures < 10 °C	
	**Crankcase heater** for Belaria® compact IR (7-11), Belaria® twin I, twin IR (15-30), Thermalia® (6-15), twin (20-42) for compressor protection For Belaria® twin I, twin IR (15-30), Thermalia® twin (20-42) 2 pieces are necessary!	6019 718
	Accessories water/water	
	**Cable sensor KTY81-210** can be used as heat source sensor dew point resistant. Connection made of PVC Cross-section: 2 x 0.22 mm^2 L = 2500 mm 50 mm free ends with wire end ferrules Measuring current of approx. 1mA Protective sleeve: 6 mm, L = 50 mm, material V4A 1.4571 max. operating temperature: -50°C to +200 °C	2040 586
	**Float ball flow switch** area of application 300 - 3000 l/h, 0-80 °C, nominal pressure 10 bar connection Rp. 1½″ installed length 335 mm bistable reed contact as normally open contact	2040 707
	**Flow switch F61 TB-9100** (alternative in case of lack of space) for heat source ground water Type of protection: IP 67 Area of application: -30/85 °C Connection: 1″ external Min. water volume: 1.2 m^3/h	2004 483

Part No.

Accessories	Part No.
 **Freeze protection concentrate PowerCool DC 924-PXL** on basis propylene glycol completely mixable with water with corrosion protection Frost protection: -20 °C with 40% mixture ratio Content plastic container: 10 kg	2009 987
 **Ground water pump kit SB-GWP** Contactor for actuation of a 3-phase ground water pump. Ready to connect without thermal overload protection	6025 513

Service

Commissioning

Commissioning by works service or Hoval trained authorised serviceman/company is condition for warranty.

For commissioning and other services please contact your Hoval sales office.

Technical data

Hoval Thermalia® (6-15) with R407C

Type			(6)	(8)	(10)	(12)	(15)
• Heat output (Q)	for B0W35	kW [1]	6.1	8.3	10.6	12.2	14.5
	for W10W35	kW [1]	8.4	11.4	14.6	16.8	19.9
• Power consumption	for B0W35	kW [1]	1.4	1.8	2.3	2.7	3.2
	for W10W35	kW [1]	1.5	2.0	2.5	2.9	3.5
• Performance	for B0W35	COP	4.4	4.6	4.6	4.6	4.6
	for W10W35	COP	5.5	5.7	5.8	5.8	5.7
• Operating weight	approx.	kg	140	150	160	170	180
• Compressor type					1 x spiral (scroll), hermetic		
• Refrigerant filling R407C		kg	2.2	2.4	2.6	2.95	3.4
• Condenser/evaporator					Plate heat exchanger		
Material					Stainless steel V4A, AISI 316, 1.4401		
Piping connections with flex. connecting hose		G	1″	1″	1″	1″	1″
Nominal volume flow and resistance brine/water heat pump							
• *Heating (*ΔT = 7 K)		m^3/h	0.75	1.02	1.31	1.5	1.78
ΔP Pressure loss condenser		kPa	2.1	2.8	2.9	3.2	3.5
Heating pump built-in			AX13-3	AX13-3	AX13-3	AX13-3	AX13-3
Residual overpressure		kPa	50	44	39	35	30
• *Heat source (*ΔT = 3 K)		m^3/h	1.54	2.12	2.71	3.11	3.68
ΔP Pressure loss evaporator (glycol)		kPa	6	7	7.5	9	9.5
Heat source pump (built in)			A13-1 KW	A14-1 KW	A15-1 KW	A15-1 KW	A15-1 KW
Residual overpressure		kPa	34	40	52	46	43
Nominal volume flow and resistance water/water heat pump							
• *Heating (*ΔT = 7 K)		m^3/h	1.03	1.41	1.80	2.07	2.45
ΔP Pressure loss condenser		kPa	3.4	4.5	4.6	5.0	6.0
Heating pump (built in) Energy class A			AX13-3	AX13-3	AX13-3	AX13-3	AX13-3
Residual overpressure		kPa	45	37	30	25	21
• *Heat source (*ΔT = 5 K)		m^3/h	1.18	1.62	2.08	2.39	2.83
ΔP Pressure loss evaporator		kPa	3.6	4.2	4.5	5.4	5.7
Heat source pump (built in) Energy class A			A13-1 KW	A14-1 KW	A15-1 KW	A15-1 KW	A15-1 KW
Residual overpressure		kPa	56	53	66	62	57
• Operating pressure							
Refrigerant side		bar			32		
Water side		bar			6		
Operating limit values							
• *Ranges of application for heating and see diagrams.*							
• *Ranges of application for heating and hot water see diagrams*							
• Installation place operation [4]	min./max.	°C			5/40		
Storage	min./max.	°C			-15/50		
Electrical data [3]							
Voltage		V			3 x 400		
Frequency		Hz			50		
Voltage range		V			380-420		
Operating pressure compressor Imax		A	5.5	6.0	7.6	9.0	10.9
Starting current with starting current limiter [2]		A	10.0	10.4	13.6	16.4	20.2
Principal current (external protection) with brine systems		A	13	13	13	13	13
		Type	C,D,K	C,D,K	C,D,K	C,D,K	C,D,K
Principal current (external protection) with ground water systems		A	13	13	13	13	13
		Type	C,D,K	C,D,K	C,D,K	C,D,K	C,D,K
Control current (external protection)		A	13	13	13	13	13
		Type	B,C,D,K,Z	B,C,D,K,Z	B,C,D,K,Z	B,C,D,K,Z	B,C,D,K,Z

[1] kW = Standard values according to EN 14511; Values for B0W35 with 25% monopolypropylene
[2] Effective value
[3] Values for electrical data apply for supply voltage of 3 x 400 V
[4] <10°C Crankcase heater is necessary

Technical data

Hoval Thermalia® H (6-15) with R134a

Type			H (6)	H (8)	H (10)	H (15)
• Heat output (Q)	for B0W35	kW [1]	3.7	5.2	6.6	9.3
	for W10W35	kW [1]	5.1	7.3	9.3	13.0
• Power consumption	for B0W35	kW [1]	0.8	1.1	1.4	1.9
	for W10W35	kW [1]	0.9	1.2	1.5	2.1
• Performance	for B0W35	COP	4.5	4.7	4.8	4.9
	for W10W35	COP	5.8	6.1	6.2	6.3
• Operating weight	approx.	kg	140	150	160	180
• Compressor type				1 x spiral (scroll), hermetic		
• Refrigerant filling R134a		kg	2.0	2.2	2.4	3.2
• Condenser/evaporator				Plate heat exchanger		
Material				Stainless steel V4A, AISI 316, 1.4401		
Piping connections with flex. connecting hose		G	1″	1″	1″	1″
Nominal volume flow and resistance brine/water heat pump						
• *Heating* (ΔT = 7 K)		m^3/h	0.45	0.64	0.82	1.15
ΔP Pressure loss condenser		kPa	0.9	1.3	1.3	1.4
Heating pump built in			AX13-3	AX13-3	AX13-3	AX13-3
Residual overpressure		kPa	55	53	50	43
• *Heat source (ΔT = 3 K)*		m^3/h	0.93	1.33	1.71	2.42
ΔP Pressure loss evaporator		kPa	3.0	3.5	4.0	5.0
Heat source pump (built in)			A13-1 kW	A13-1 kW	A14-1 kW	A14-1 kW
Residual overpressure		kPa	44	38	33	38
Nominal volume flow and resistance water/water heat pump						
• *Heating* (ΔT = 7 K)		m^3/h	0.63	0.90	1.14	1.61
ΔP Pressure loss condenser		kPa	1.5	2.1	2.1	2.3
Heating pump built in			AX13-3	AX13-3	AX13-3	AX13-3
Residual overpressure		kPa	53	46	41	32
• *Heat source* (ΔT = 5 K)		m^3/h	0.73	1.05	1.34	1.89
ΔP Pressure loss evaporator		kPa	1.8	2.1	2.4	3.0
Heat source pump (built in)			A13-1 kW	A13-1 kW	A13-1 kW	A13-1 kW
Residual overpressure		kPa	58	72	70	67
• Operating pressure						
Refrigerant side		bar		30		
Water side		bar		6		
Operating limit values						
• *Ranges of application for heating see diagrams.*						
• *Ranges of application for heating and hot water see diagrams.*						
• Installation place operation [4]	min./max.	°C		5/40		
Storage	min./max.	°C		-15/50		
Electrical data [3]						
Voltage		V		3 x 400		
Frequency		Hz		50		
Voltage range		V		380-420		
Operating pressure compressor Imax		A	4.0	5.5	6.2	7.9
Starting current with starting current limiter [2]		A	10.0	10.4	13.6	20.2
Principal current (external protection) with brine systems		A	13	13	13	13
		Type	C,D,K	C,D,K	C,D,K	C,D,K
Principal current (external protection) with ground water systems		A	13	13	13	13
		Type	C,D,K	C,D,K	C,D,K	C,D,K
Control current (external protection)		A	13	13	13	13
		Type	B,C,D,K,Z	B,C,D,K,Z	B,C,D,K,Z	B,C,D,K,Z

[1] kW = standard values according to EN 14511; values for B0W35 with 25% monopolypropylene
[2] Effective value
[3] Values for electrical data apply for supply voltage of 3 x 400 V
[4] <10°C crankcase heater is necessary

Technical data

Hoval Thermalia® (6-15) and H (6-15)

Sound emission
The effective sound pressure level [1] in the installation room is dependent on different factors like room size, absorptive capacity, reflection, free sound spreading etc.

Therefore it is important that the installation room lies, if possible, outside the noise-sensitive range and is supplied with sound-absorbing doors.

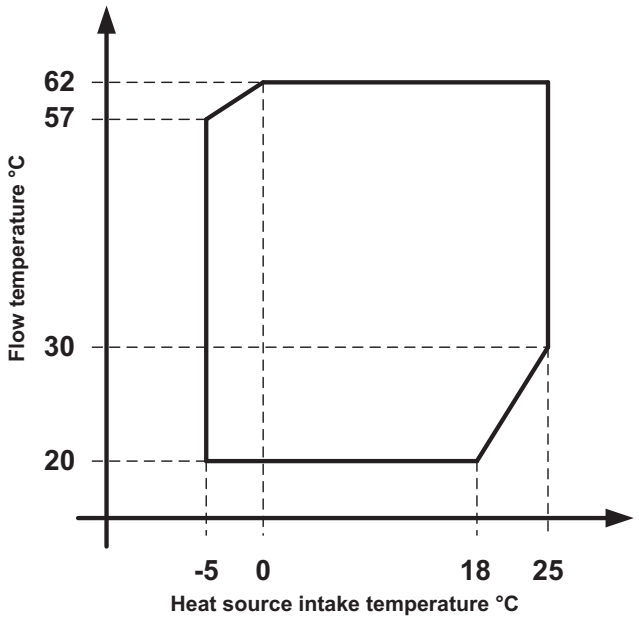
Ducts and pipes must be fixed to walls and ceiling in a way that no structure-borne sound is being transmitted to the system.

Type	(6)	(8)	(10)	(12)	(15)
Sound power level dB(A)	47	47	48	49	50
Sound pressure level dB(A) [1]	35	35	36	37	38

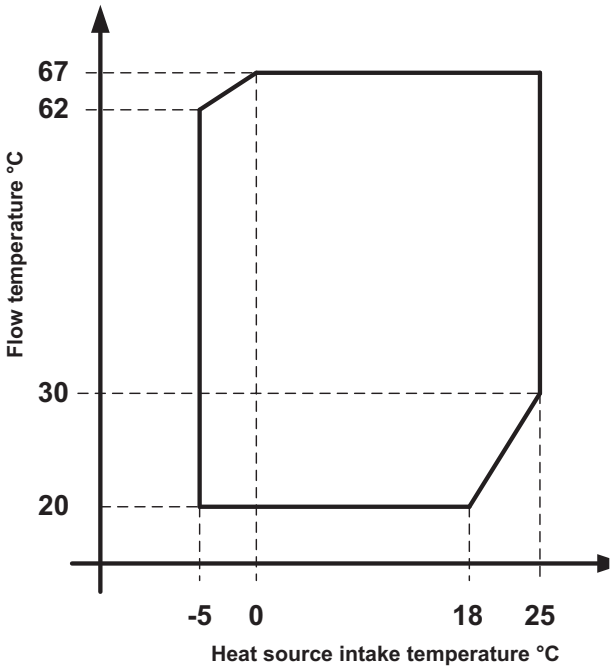
[1] Sound pressure level, distance 1 m
(in standard room with approx. 5-6 dB(A) sound absorption)

Diagrams range of application

Thermalia® (6-15)



Thermalia® H (6-15)

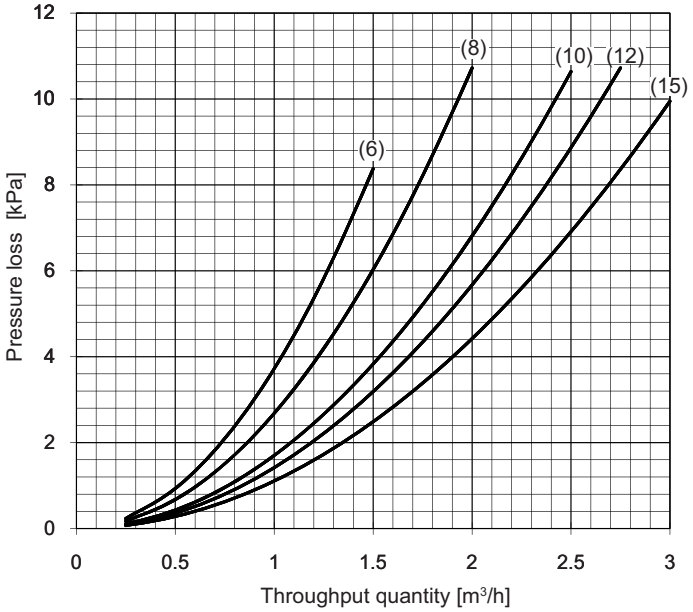


Technical data

Performance data

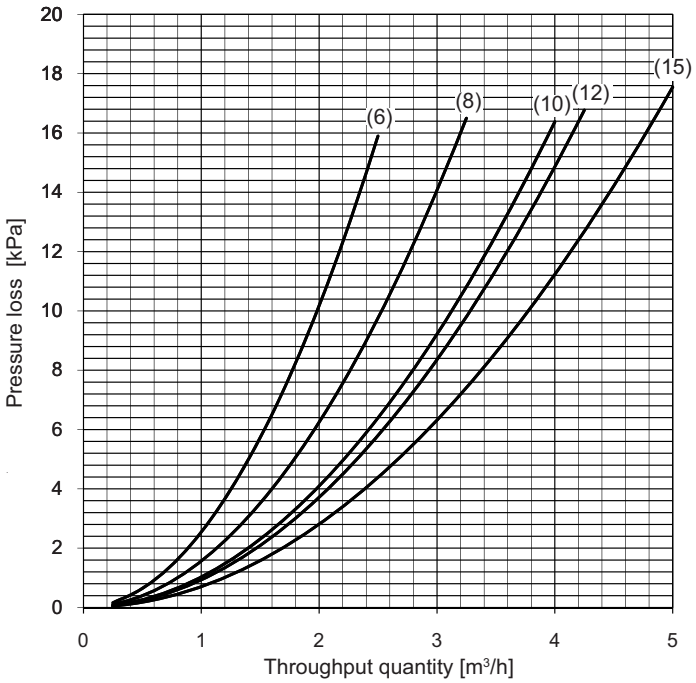
Heating

Pressure loss condenser with water



Heat source

Pressure loss evaporator
with ethylene glycol 25% (Antifrogen N)



Refrigeration capacity

$$Q_0 = Q - P$$

Q_0 = Refrigeration capacity (kW)
Q = Heat output (kW)
P = Power consumption compressor (kW)
Δt_2 = Temperature difference heat source supply/discharge (K)
C = 0.86
c_p = 0.89 (specific heat)
γ = 1.05 (specific weight, density)

Volume flow condenser

$$V = \frac{Q_0 \cdot c}{\Delta t_2 \cdot c_p \cdot \gamma} \quad (m^3/h)$$

Δp (kPa) = Pressure loss with frost protection (1 kPa = 0.1 mWC)
Δp = f x ΔP f

Ethylene glycol % (Antifrogen N)	
0.97	20
1	25
1.03	30

Δp_w (kPa) = Pressure loss with water (1 kPa = 0.1 mWC)
Δp_w = ΔP x 0.89

Technical data
Performance data

Hoval Thermalia® (6-15) with R407C

Hoval Thermalia®			(6)			(8)			(10)			(12)			(15)		
Flow	Heat source		Q	P	COP	Q	P	COP	Q	P	COP	Q	P	COP	Q	P	COP
t_{VL} (°C)	Medium t_1	(°C)	kW	kW		kW	kW		kW	kW		kW	kW		kW	kW	
30	Brine (Sole)	-5	5.5	1.3	4.4	7.5	1.6	4.6	9.6	2.1	4.6	11.1	2.4	4.6	13.1	2.9	4.6
		-2	5.9	1.3	4.7	8.1	1.6	4.9	10.3	2.1	4.9	11.9	2.4	4.9	14.0	2.9	4.9
		0	6.2	1.3	4.9	8.4	1.7	5.1	10.8	2.1	5.1	12.4	2.4	5.1	14.7	2.9	5.1
		2	6.5	1.3	5.2	8.9	1.6	5.4	11.3	2.1	5.4	13.1	2.4	5.4	15.5	2.9	5.4
		5	7.2	1.3	5.6	9.7	1.7	5.8	12.4	2.1	5.9	14.3	2.4	5.9	17.0	2.9	5.8
	Water	8	7.9	1.3	5.9	10.8	1.7	6.2	13.8	2.2	6.2	15.9	2.6	6.2	18.8	3.1	6.2
		10	8.5	1.4	6.2	11.6	1.8	6.5	14.8	2.3	6.5	17.1	2.6	6.5	20.2	3.1	6.5
		12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	Brine (Sole)	-5	5.4	1.4	3.9	7.4	1.8	4.1	9.5	2.3	4.1	10.9	2.7	4.1	12.9	3.2	4.0
		-2	5.8	1.4	4.1	7.9	1.8	4.3	10.1	2.3	4.3	11.7	2.7	4.3	13.8	3.2	4.3
		0	6.1	1.4	4.4	8.3	1.8	4.6	10.6	2.3	4.6	12.2	2.7	4.6	14.5	3.2	4.6
		2	6.4	1.4	4.6	8.7	1.8	4.8	11.2	2.3	4.8	12.8	2.7	4.8	15.2	3.2	4.7
		5	7.0	1.4	4.9	9.6	1.9	5.2	12.2	2.4	5.2	14.1	2.7	5.2	16.7	3.3	5.1
	Water	8	7.8	1.5	5.3	10.6	1.9	5.5	13.6	2.5	5.5	15.6	2.8	5.5	18.5	3.4	5.5
		10	8.4	1.5	5.5	11.4	2.0	5.7	14.6	2.5	5.8	16.8	2.9	5.8	19.9	3.5	5.7
		12	8.8	1.5	5.7	12.0	2.0	6.0	15.4	2.6	6.0	17.7	3.0	6.0	21.0	3.5	5.9
		15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	Brine (Sole)	-5	5.3	1.5	3.4	7.2	2.0	3.6	9.2	2.6	3.6	10.6	2.9	3.6	12.6	3.5	3.6
		-2	5.7	1.6	3.7	7.8	2.0	3.8	9.9	2.6	3.9	11.4	3.0	3.9	13.5	3.5	3.8
		0	6.0	1.6	3.8	8.1	2.0	4.0	10.4	2.6	4.0	12.0	3.0	4.0	14.2	3.6	4.0
		2	6.3	1.6	4.0	8.6	2.0	4.2	11.0	2.6	4.2	12.6	3.0	4.2	15.0	3.6	4.2
		5	6.9	1.6	4.3	9.3	2.1	4.5	11.9	2.6	4.5	13.7	3.0	4.5	16.3	3.6	4.5
	Water	8	7.6	1.6	4.6	10.3	2.1	4.8	13.2	2.7	4.9	15.2	3.1	4.9	18.0	3.7	4.8
		10	8.2	1.7	4.9	11.1	2.2	5.1	14.2	2.8	5.1	16.3	3.2	5.1	19.3	3.8	5.0
		12	8.6	1.7	5.1	11.7	2.2	5.3	15.0	2.8	5.3	17.2	3.2	5.3	20.4	3.9	5.3
		15	9.4	1.7	5.5	12.8	2.2	5.7	16.3	2.8	5.8	18.7	3.3	5.7	22.2	3.9	5.7
45	Brine (Sole)	-5	5.2	1.7	3.1	7.1	2.2	3.2	9.0	2.8	3.2	10.4	3.2	3.2	12.3	3.8	3.2
		-2	5.6	1.7	3.3	7.6	2.2	3.4	9.7	2.8	3.5	11.2	3.2	3.4	13.2	3.9	3.4
		0	5.9	1.7	3.4	8.0	2.2	3.5	10.2	2.9	3.6	11.7	3.3	3.6	13.9	3.9	3.5
		2	6.2	1.7	3.6	8.4	2.3	3.7	10.8	2.9	3.8	12.4	3.3	3.7	14.7	4.0	3.7
		5	6.7	1.7	3.8	9.1	2.3	4.0	11.6	2.9	4.0	13.4	3.3	4.0	15.9	4.0	4.0
	Water	8	7.4	1.8	4.1	10.1	2.3	4.3	12.8	3.0	4.3	14.8	3.4	4.3	17.5	4.1	4.3
		10	7.9	1.8	4.3	10.8	2.4	4.5	13.8	3.0	4.5	15.9	3.5	4.5	18.8	4.2	4.5
		12	8.4	1.8	4.5	11.4	2.4	4.7	14.5	3.1	4.8	16.7	3.5	4.8	19.8	4.2	4.7
		15	9.1	1.9	4.8	12.3	2.4	5.1	15.7	3.1	5.1	18.1	3.6	5.1	21.4	4.3	5.0
50	Brine (Sole)	-5	5.0	1.8	2.7	6.9	2.4	2.9	8.8	3.0	2.9	10.1	3.5	2.9	11.9	4.2	2.8
		-2	5.4	1.9	2.9	7.4	2.4	3.0	9.4	3.1	3.1	10.9	3.6	3.0	12.9	4.3	3.0
		0	5.7	1.9	3.0	7.8	2.5	3.2	10.0	3.1	3.2	11.5	3.6	3.2	13.6	4.3	3.1
		2	6.1	1.9	3.2	8.2	2.5	3.3	10.5	3.2	3.3	12.1	3.7	3.3	14.4	4.4	3.3
		5	6.5	1.9	3.4	8.9	2.5	3.5	11.3	3.2	3.5	13.0	3.7	3.5	15.4	4.4	3.5
	Water	8	7.2	2.0	3.6	9.8	2.6	3.8	12.5	3.3	3.8	14.4	3.8	3.8	17.0	4.6	3.7
		10	7.7	2.0	3.8	10.4	2.6	4.0	13.3	3.4	4.0	15.4	3.9	4.0	18.2	4.6	3.9
		12	8.1	2.0	4.0	11.0	2.7	4.1	14.1	3.4	4.2	16.2	3.9	4.2	19.2	4.7	4.1
		15	8.8	2.1	4.2	11.9	2.7	4.4	15.2	3.4	4.4	17.5	3.9	4.4	20.8	4.7	4.4
55	Brine (Sole)	-5	4.9	2.0	2.5	6.7	2.6	2.6	8.5	3.3	2.6	9.8	3.8	2.6	11.6	4.6	2.5
		-2	5.3	2.0	2.6	7.2	2.7	2.7	9.2	3.4	2.7	10.6	3.9	2.7	12.5	4.7	2.7
		0	5.6	2.1	2.7	7.6	2.7	2.8	9.8	3.4	2.8	11.2	4.0	2.8	13.3	4.7	2.8
		2	5.9	2.1	2.8	8.0	2.7	2.9	10.3	3.5	3.0	11.8	4.0	3.0	14.0	4.8	2.9
		5	6.3	2.1	3.0	8.6	2.8	3.1	11.0	3.5	3.1	12.7	4.1	3.1	15.0	4.9	3.1
	Water	8	7.0	2.2	3.2	9.5	2.9	3.3	12.1	3.6	3.3	13.9	4.2	3.3	16.5	5.0	3.3
		10	7.4	2.2	3.3	10.1	2.9	3.5	12.9	3.7	3.5	14.8	4.2	3.5	17.6	5.1	3.5
		12	7.8	2.2	3.5	10.6	2.9	3.6	13.6	3.7	3.7	15.6	4.3	3.7	18.5	5.1	3.6
		15	8.5	2.3	3.7	11.5	3.0	3.9	14.7	3.8	3.9	16.9	4.3	3.9	20.1	5.2	3.9
60	Brine (Sole)	-5	4.8	2.2	2.2	6.5	2.8	2.3	8.3	3.6	2.3	9.5	4.1	2.3	11.3	4.9	2.3
		-2	5.1	2.2	2.3	7.0	2.9	2.4	8.9	3.7	2.4	10.2	4.2	2.4	12.1	5.0	2.4
		0	5.5	2.3	2.4	7.4	2.9	2.5	9.5	3.7	2.5	10.9	4.3	2.5	12.9	5.1	2.5
		2	5.8	2.3	2.5	7.8	3.0	2.6	10.0	3.8	2.7	11.5	4.4	2.6	13.7	5.2	2.6
		5	6.2	2.3	2.7	8.4	3.0	2.8	10.7	3.8	2.8	12.4	4.4	2.8	14.6	5.3	2.8
	Water	8	6.8	2.4	2.8	9.2	3.1	3.0	11.7	4.0	3.0	13.5	4.6	3.0	16.0	5.5	2.9
		10	7.2	2.4	3.0	9.8	3.1	3.1	12.5	4.0	3.1	14.3	4.6	3.1	17.0	5.5	3.1
		12	7.5	2.4	3.1	10.3	3.2	3.2	13.1	4.0	3.2	15.1	4.7	3.2	17.9	5.6	3.2
		15	8.2	2.5	3.3	11.1	3.2	3.4	14.2	4.1	3.5	16.4	4.7	3.5	19.4	5.7	3.4

Q = Heat output (kW)
P = Power consumption (kW)
COP = Performance
t_1 = Heat source (evaporator) Inlet temperature (°C)
t_{VL} = Discharge temperature (Heating flow) at condenser (°C)

Performance data

Medium	ΔT	Water/frost protection*	
Heat source			
Brine (Sole)	3K	75%	25%
Water	5K	100%	-
Heating			
Water	7-10 K	100%	-

Output correction factor

	Antifreeze content			
	20%	25%	30%	40%
Q	1.01	1	0.99	0.98
P	1.005	1	0.995	0.99

* Antifreeze: Ethylene glycol e.g. Antifrogen N

Technical data
Performance data

Hoval Thermalia® H (6-15) with R134a

Hoval Thermalia®			H (6)			H (8)			H (10)			H (15)		
Flow	Heat source		Q	P	COP	Q	P	COP	Q	P	COP	Q	P	COP
t_{VL} (°C)	Medium t_1	(°C)	kW	kW		kW	kW		kW	kW		kW	kW	
30	Brine (Sole)	-5	3.3	0.7	4,4	4.6	1.0	4.6	5.9	1.3	4.7	8.3	1.7	4.8
		-2	3.6	0.7	4.8	5.0	1.0	5.0	6.4	1.3	5.1	9.0	1.7	5.2
		0	3.7	0.7	5.1	5.3	1.0	5.3	6.8	1.2	5,4	9.5	1.7	5.5
		2	4.0	0.7	5.3	5.6	1.0	5.6	7.2	1.3	5.7	10.1	1.7	5.8
		5	4.3	0.8	5.7	6.2	1.0	6.0	7.8	1.3	6.1	11.0	1.8	6.2
	Water	8	4.9	0.8	6.3	6.9	1.0	6.6	8.8	1.3	6.8	12.4	1.8	6.9
		10	5.3	0.8	6.6	7.4	1.1	6.9	9.5	1.3	7.1	13.3	1.8	7.2
		12	-	-	-	-	-	-	-	-	-	-	-	-
		15	-	-	-	-	-	-	-	-	-	-	-	-
35	Brine (Sole)	-5	3.2	0.8	3.9	4.5	1.1	4.1	5.8	1,4	4.2	8.1	1.9	4.3
		-2	3.5	0.8	4.2	4.9	1.1	4,4	6.3	1,4	4.5	8.8	1.9	4.6
		0	3.7	0.8	4.5	5.2	1.1	4.7	6.6	1,4	4.8	9.3	1.9	4.9
		2	3.9	0.8	4.7	5.5	1.1	4.9	7.0	1,4	5.0	9.9	1.9	5.1
		5	4.3	0.8	5.1	6.0	1.1	5.3	7.7	1,4	5,4	10.8	2.0	5.5
	Water	8	4.8	0.9	5.6	6.8	1.2	5.8	8.6	1.5	5.9	12.1	2.0	6.0
		10	5.1	0.9	5.8	7.3	1.2	6.1	9.3	1.5	6.2	13.0	2.1	6.3
		12	5.5	0.9	6.1	7.7	1.2	6,4	9.9	1.5	6.6	13.9	2.1	6.7
		15	-	-	-	-	-	-	-	-	-	-	-	-
40	Brine (Sole)	-5	3.1	0.9	3.5	4.4	1.2	3.7	5.7	1.5	3.7	8.0	2.1	3.8
		-2	3.4	0.9	3.8	4.8	1.2	4.0	6.2	1.5	4.0	8.7	2.1	4.1
		0	3.6	0.9	4.0	5.1	1.2	4.2	6.5	1.5	4.3	9.2	2.1	4.3
		2	3.8	0.9	4.2	5.4	1.2	4.4	6.9	1.6	4.5	9.8	2.1	4.5
		5	4.2	0.9	4.5	5.9	1.3	4.7	7.6	1.6	4.8	10.7	2.2	4.9
	Water	8	4.7	1.0	4.9	6.6	1.3	5.1	8.5	1.6	5.3	11.9	2.2	5.3
		10	5.0	1.0	5.2	7.1	1.3	5.4	9.1	1.6	5.5	12.8	2.3	5.6
		12	5.4	1.0	5.4	7.6	1.3	5.7	9.7	1.7	5.8	13.6	2.3	5.9
		15	5.8	1.0	5.9	8.2	1.3	6.1	10.5	1.7	6.3	14.8	2.3	6.4
45	Brine (Sole)	-5	3.1	1.0	3.2	4.3	1.3	3.3	5.5	1.6	3.4	7.8	2.3	3.4
		-2	3.3	1.0	3.4	4.7	1.3	3.6	6.0	1.7	3.6	8.5	2.3	3.7
		0	3.6	1.0	3.6	5.0	1.3	3.7	6.4	1.7	3.8	9.0	2.3	3.9
		2	3.8	1.0	3.8	5.4	1.4	3.9	6.8	1.7	4.0	9.6	2.4	4.1
		5	4.1	1.0	4.1	5.8	1.4	4.2	7.5	1.7	4.3	10.5	2.4	4.4
	Water	8	4.6	1.1	4.4	6.5	1.4	4.6	8.3	1.8	4.7	11.7	2.5	4.8
		10	4.9	1.1	4.6	7.0	1.4	4.8	8.9	1.8	4.9	12.5	2.5	5.0
		12	5.3	1.1	4.9	7.4	1.5	5.1	9.5	1.8	5.2	13.3	2.5	5.3
		15	5.7	1.1	5.3	8.1	1.5	5.5	10.3	1.8	5.6	14.5	2.5	5.7
50	Brine (Sole)	-5	3.0	1.1	2.8	4.2	1.5	2.9	5.4	1.8	3.0	7.6	2.5	3.0
		-2	3.3	1.1	3.0	4.6	1.5	3.1	5.9	1.8	3.2	8.3	2.5	3.3
		0	3.5	1.1	3.2	4.9	1.5	3.3	6.2	1.8	3.4	8.8	2.5	3.5
		2	3.7	1.1	3.3	5.2	1.5	3.5	6.7	1.9	3.6	9.3	2.6	3.6
		5	4.1	1.1	3.6	5.7	1.5	3.8	7.3	1.9	3.9	10.3	2.6	3.9
	Water	8	4.5	1.2	3.9	6.4	1.6	4.1	8.1	1.9	4.2	11.4	2.7	4.3
		10	4.8	1.2	4.1	6.8	1.6	4.3	8.7	2.0	4.4	12.2	2.7	4.5
		12	5.1	1.2	4.3	7.3	1.6	4.5	9.3	2.0	4.6	13.0	2.8	4.7
		15	5.6	1.2	4.6	7.9	1.6	4.8	10.1	2.0	5.0	14.1	2.8	5.0
55	Brine (Sole)	-5	2.9	1.2	2.5	4.1	1.6	2.6	5.3	2.0	2.6	7.4	2.8	2.7
		-2	3.2	1.2	2.7	4.5	1.6	2.8	5.8	2.0	2.9	8.1	2.8	2.9
		0	3.4	1.2	2.8	4.8	1.6	3.0	6.1	2.0	3.0	8.5	2.8	3.1
		2	3.6	1.2	3.0	5.1	1.6	3.1	6.5	2.0	3.2	9.1	2.8	3.2
		5	4.0	1.2	3.3	5.6	1.7	3.4	7.2	2.1	3.5	10.1	2.9	3.5
	Water	8	4.4	1.3	3.5	6.3	1.7	3.7	8.0	2.1	3.8	11.2	2.9	3.8
		10	4.7	1.3	3.7	6.7	1.7	3.8	8.5	2.2	3.9	12.0	3.0	4.0
		12	5.0	1.3	3.8	7.1	1.8	4.0	9.0	2.2	4.1	12.7	3.0	4.2
		15	5.4	1.3	4.1	7.7	1.8	4.3	9.8	2.2	4.4	13.7	3.1	4.5
60	Brine (Sole)	-5	2.8	1.3	2.2	4.0	1.7	2.3	5.1	2.2	2.4	7.2	3.0	2.4
		-2	3.1	1.3	2.4	4.4	1.7	2.5	5.6	2.2	2.6	7.9	3.0	2.6
		0	3.3	1.3	2.5	4.6	1.7	2.7	5.9	2.2	2.7	8.3	3.0	2.8
		2	3.5	1.3	2.7	4.9	1.8	2.8	6.3	2.2	2.9	8.8	3.0	2.9
		5	3.9	1.3	3.0	5.5	1.8	3.1	7.0	2.2	3.2	9.9	3.1	3.2
	Water	8	4.3	1.4	3.2	6.1	1.8	3.3	7.8	2.3	3.4	11.0	3.2	3.5
		10	4.6	1.4	3.3	6.5	1.9	3.5	8.3	2.4	3.5	11.7	3.3	3.6
		12	4.9	1.4	3.4	6.9	1.9	3.6	8.8	2.4	3.7	12.3	3.3	3.7
		15	5.3	1.4	3.7	7.5	1.9	3.8	9.5	2.4	3.9	13.4	3.3	4.0

Q = Heat output (kW)
P = Power consumption (kW)
COP = Performance
t_1 = Heat source (evaporator) Inlet temperature (°C)
t_{VL} = Discharge temperature (Heating flow) at condenser (°C)

Performance data

Medium	ΔT	Water/frost protection*	
Heat source			
Brine (Sole)	3K	75%	25%
Water	5K	100%	-
Heating			
Water	7-10 K	100%	-

Output correction factor

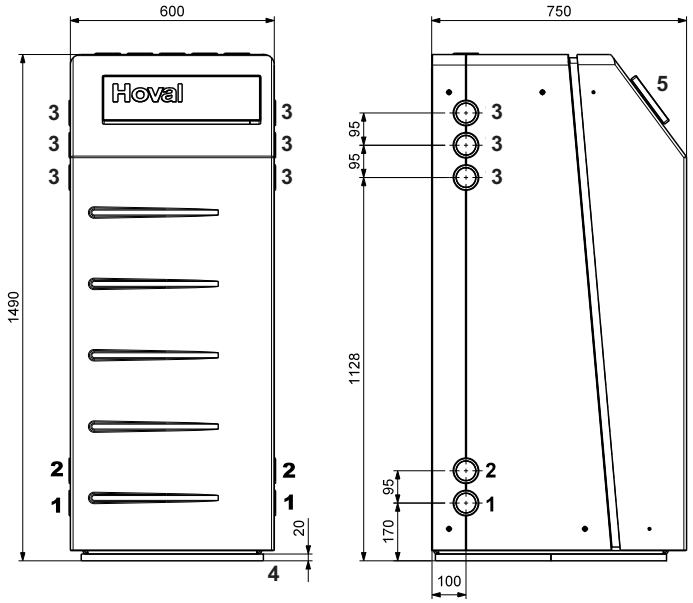
	Antifreeze content			
	20%	25%	30%	40%
Q	1.01	1	0.99	0.98
P	1.005	1	0.995	0.99

* Antifreeze: Ethylene glycol e.g. Antifrogen N

Dimensions

Hoval Thermalia® (6-15) and H (6-15)

Dimensions in mm



1 Heat source - outlet R1″ (selectable lateral or above)
2 Heat source - inlet R1″ (selectable lateral or above)
3 Openings freely selectable for:
- heating flow R1″
- heating return R1″
- hot water R1″ (left or above)
- electrical connection

4 Vibration damping
5 Operating panel

The 4 flexible hoses 1″ can be extracted from the heat pump by at least 30 cm

Required space (required wall distance in mm for operation and maintenance)

Type	front	rear	right or left side
(6-15) and H (6-15)	min. 800	min. 20	min. 500