



Heat exchanger with copper tubes and aluminium fins

# Heat exchanger

## WL



### For the reheating of airflows in circular ducting

Circular hot water heat exchanger for the reheating of airflows, suitable for VAV terminal units TVR and mechanical self-powered CAV terminal units RN or VFC

- For hot water up to 100°C
- Copper tubes arranged in two rows, with aluminium fins
- Installation in horizontal or vertical ducts, independent of airflow direction
- Suitable for circular air ducts according to EN 1506 or EN 13180
- With lip seal and inspection access
- Maximum water-side operating pressure is 8 bar
- Casing air leakage according to EN 15727, class D

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## General information

### Application

- Hot water heat exchanger for reheating the airflow in circular ducts
- For VAV terminal units Type TVR and for CAV controllers Type RN or VFC
- For hot water up to 100 °C
- Construction not designed for and performance data not applicable to cold water operation

### Nominal sizes

- 100, 125, 160, 200, 250, 315, 400

### Parts and characteristics

- Ready-to-install heat exchanger
- Copper tubes arranged in two rows
- Lip seal
- Inspection access
- Tested for leakage

### Construction features

- Rectangular casing
- Spigot with lip seal, for circular connecting ducts to EN 1506 or EN 13180
- Maximum water-side operating pressure is 10 bar
- Horizontal water connection
- Plain copper tube ends for water connection

### Material and surfaces

- Casing made of galvanised sheet steel
- Copper pipes
- Aluminium fins

### Standards and guidelines

- Casing air leakage according to EN 15727, class D

### Maintenance

- Maintenance-free as construction and materials are not subject to wear



## Technical data

Nominal sizes	100 – 400 mm
Volume flow rate range	10 – 750 l/s or 36 – 2700 m <sup>3</sup> /h
Thermal output	0.25 – 18 kW
Maximum hot water temperature	100 °C
Maximum water-side operating pressure	10 bar
Water-side differential pressure	0.3 – 12 kPa
Air-side static differential pressure	5 – 80 Pa

Quick sizing

Technical data of the heat exchanger  
Basic units: TVR, RN and VFC (TEST)

NS	q <sub>v</sub>		Δp <sub>st</sub> Pa	PWW 50/40, t <sub>e</sub> = 16 °C				PWW 70/55, t <sub>e</sub> = 16 °C			
	l/s	m <sup>3</sup> /h		Φ [kW]	t <sub>a</sub> [°C]	q <sub>m</sub> [kg/h]	Δp <sub>v</sub> [kPa]	Φ [kW]	t <sub>a</sub> [°C]	q <sub>m</sub> [kg/h]	Δp <sub>v</sub> [kPa]
100	10	36	5	0.25	36.1	21	0.3	0.40	48.5	23	0.5
100	20	72	10	0.38	31.3	33	0.4	0.62	41.2	36	0.6
100	30	108	15	0.47	28.8	41	0.5	0.79	37.5	46	0.7
100	40	144	25	0.55	27.2	48	0.6	0.95	35.2	55	0.8
100	45	162	30	0.58	26.5	51	0.7	1.02	34.4	59	1
125	18	65	5	0.36	32	31	0.3	0.58	42.2	34	0.5
125	35	126	20	0.51	27.9	44	0.5	0.87	36.2	51	0.8
125	50	180	40	0.62	26	53	1	1.09	33.8	64	1
125	65	234	60	0.7	24.8	61	1.2	1.3	32.3	76	1.3
125	75	270	80	0.76	24.2	66	1.5	1.44	31.6	84	1.5
160	28	101	5	0.69	36.1	60	1	1.17	49.9	68	1
160	50	180	10	1.05	33.1	91	2	1.83	45.8	107	3
160	70	252	15	1.35	31.7	117	4	2.32	43	135	4
160	95	342	25	1.7	30.6	147	5	2.85	40.4	166	6
160	115	414	35	1.94	29.7	168	7	3.23	38.8	188	7
200	45	162	5	0.97	33.6	84	2	1.69	46.5	98	2
200	80	288	20	1.49	31.2	129	4	2.54	41.8	148	5
200	115	414	35	1.94	29.7	168	7	3.23	38.8	188	7
200	150	540	55	2.29	28.4	199	9	3.37	36.8	223	10
200	180	648	80	2.57	27.6	223	11	4.3	35.4	251	12
250	70	252	5	1.53	33.8	133	1	2.67	47	155	1
250	125	450	15	2.35	31.3	203	2	4.14	43	242	3
250	180	648	25	3.1	30	269	3	5.29	39.9	308	4
250	235	846	40	3.76	29	326	5	6.29	37.8	367	5
250	290	1044	60	4.29	28.1	372	6	7.2	36.2	420	7
315	115	414	5	2.5	33.7	217	1	4.41	47.2	257	1
315	200	720	15	3.82	31.5	331	2	6.66	43.1	388	3
315	285	1026	25	5.02	30.4	436	4	8.45	40.1	493	4
315	375	1350	40	6.05	29.1	525	5	10.11	37.9	589	6
315	460	1656	60	6.89	28.2	597	7	11.52	36.4	672	7
400	185	666	5	4.02	33.7	348	2	7.08	47.2	413	2
400	325	1170	15	6.24	31.6	542	3	10.55	42.4	615	4
400	465	1674	30	8.06	30.1	699	5	13.4	39.5	781	6
400	605	2178	50	9.54	28.8	827	7	15.89	37.4	927	8
400	750	2700	75	10.92	27.9	947	9	18.22	35.8	1062	10

Φ: Thermal output

PWW: Pumped hot water heating system, flow temperature/return temperature

t<sub>e</sub>: Inlet airflow temperature

t<sub>a</sub>: Outlet airflow temperature

q<sub>v</sub>: Volume flow rate

q<sub>m</sub>: Mass flow rate

Δp<sub>v</sub>: Water-side differential pressure

Δp<sub>st</sub>: Static differential pressure

## Specification text

This specification text describes the general properties of the product. Texts for variants can be generated with our Easy Product Finder design programme.

Circular hot water heat exchangers for reheating the airflow in ventilation and air conditioning systems. Dimensions fit VAV terminal units TVR as well as CAV terminal units RN and VFC. Spigot with lip seal for ducts according to EN 1506 or EN 13180. Casing air leakage according to EN 15727, class D.

### Materials and surfaces

- Casing made of galvanised sheet steel
- Copper pipes
- Aluminium fins

### Technical data

- Volume flow rate range: 10 to 750 l/s or 36 to 2700 m<sup>3</sup>/h
- Thermal output: 0.25 – 18 kW
- Maximum water temperature: 100 °C
- Maximum water-side operating pressure: 10 bar
- Water-side differential pressure: 0.3 – 12 kPa
- Static differential pressure: 5 – 80 Pa

### Sizing data

- $q_v$  (m<sup>3</sup>/h)
- $t_e$  [°C]
- PWW [°C]
- $\Phi$  [kW]



Order code

WL / 160  
| |  
1 2

**1 Type**

**WL** Hot water heat exchanger for air terminal units TVE, TVR and CAV terminal units RN and VFC

**2 Nominal size [mm]**

**100, 125, 160, 200, 250, 315, 400**

**Order example: WL/160**

Type

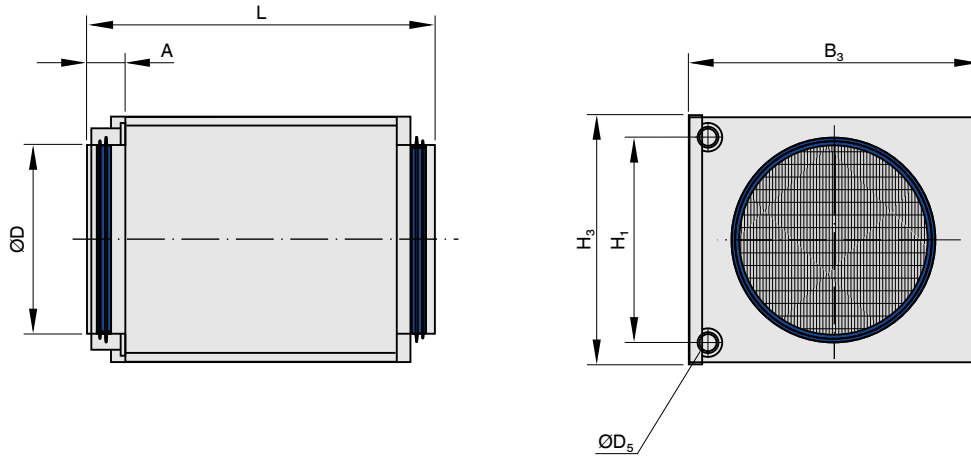
WL – Hot water heat exchanger

Nominal size [mm]

160

## Dimensions and weight

### WL, dimensions



### Dimensions and weights of the heat exchanger

NS	ØD	L	B <sub>3</sub>	H <sub>3</sub>	H <sub>1</sub>	A	ØD <sub>5</sub>	~ m [kg]
100	99	336	251	188	137	30	10	4,0
125	124	346	251	188	137	35	10	4,0
160	159	386	326	263	212	40	10	6,0
200	199	386	326	263	212	40	10	6,0
250	249	386	411	338	250	40	22	8,0
315	314	386	486	413	325	40	22	10,0
400	399	386	557	489	400	55	22	14,0

### Diameter and material thickness of the connection pipes

NS	Dimensions
100	Cu Ø 10 × 0.8
125	Cu Ø 10 × 0.8
160	Cu Ø 10 × 0.8
200	Cu Ø 10 × 0.8
250	Cu Ø 22 × 1
315	Cu Ø 22 × 1
400	Cu Ø 22 × 1



## Installation details

- Installation in horizontal or vertical ducts independent of airflow direction
- Capacity control and supply connections to be provided by others
- Vents and drainage by others



## Explanation

**L** [mm]; [in]

Length of unit including connecting spigot

**L<sub>1</sub>** [mm]; [in]

Length of casing or acoustic cladding

**B** [mm]; [in]

Duct width

**B<sub>1</sub>** [mm]; [in]

Screw hole pitch of flange (horizontal)

**B<sub>2</sub>** [mm]; [in]

Overall dimension of flange (width)

**B<sub>3</sub>** [mm]

Unit width

**H** [mm]; [in]

Duct height

**H<sub>1</sub>** [mm]; [in]

Screw hole pitch of flange (vertical)

**H<sub>2</sub>** [mm]; [in]

Overall dimension of flange (height)

**H<sub>3</sub>** [mm]

Unit height

**R** ["]

Diameter of connecting threaded pipes

**m** [kg]; [lb]

Unit weight including the minimum required attachments (control component)

**q<sub>v</sub>** [m<sup>3</sup>/h]; [l/s]; [CFM]

Volume flow rate

**q<sub>m</sub>** [kg/h]

Mass flow rate

**Δp<sub>v</sub>** [kPa]

Water-side differential pressure

**Δp<sub>st</sub>** [Pa]; [inWg]

Static differential pressure

**ØD<sub>4</sub>** [mm]

Inside diameter of the screw holes of flanges

**Φ** [kW]

Thermal output

**PWW** [°C]

Hot water heating system, flow temperature/return temperature

**t<sub>e</sub>** [°C]

Inlet airflow temperature

**t<sub>a</sub>** [°C]

Outlet airflow temperature

**Lengths**

All lengths are given in millimetres [mm] unless stated otherwise.