



QLI



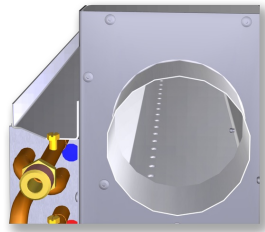
TESTED TO VDI 6022



EUROVENT
CERTIFICATION



QLI, WATER
CONNECTIONS



QLI, NOZZLES

TYPE QLI

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INDUCTION-TYPE DISPLACEMENT FLOW DIFFUSER IN NOMINAL LENGTHS OF 900, 1200 AND 1500 MM, WITH VERTICAL HEAT EXCHANGER AND CONDENSATE DRIP TRAY

Induction-type displacement flow diffuser with 2-pipe or 4-pipe heat exchanger, for installation under a sill. The condensate drip tray is useful if the temperature temporarily falls below the dew point.

- High heating and cooling capacity with a low conditioned primary air volume flow rate and low sound power level
- High comfort levels due to low airflow velocity in the occupied zone
- Three nozzle variants to optimise induction based on demand
- Two different heat exchanger positions

Optional equipment and accessories

- Control equipment
- Fixing systems for wall or floor fixing, fixing systems for both wall and floor fixing
- Powder coating in many different colours, e.g. RAL CLASSIC

Application

Application

- Induction-type displacement flow diffusers of Type QLI for installation under a sill
- High comfort levels due to low-turbulence airflow and low airflow velocity in the occupied zone
- Displacement flow
- Choice of location for primary air spigot at a narrow side; end cap may have to be changed accordingly
- 2-pipe or 4-pipe heat exchangers enable good comfort levels with a low conditioned primary air volume flow rate



- Energy-efficient solution since water is used for heating and cooling

Special characteristics

- Low-turbulence supply air discharge as displacement flow
- Vertical heat exchanger as 2-pipe or 4-pipe system, optional condensate drip tray including condensate drain that can be connected to a condensate pipe (to be provided by others)
- Water connections at the narrow side, Ø12 mm Cu pipe, either with plain tails or with external thread or union nut, G½", flat seal

Nominal sizes

- 900, 1200, 1500 mm

Description



Variants

- WV: Heat exchanger at the front, water connections on the left
- WVR: Heat exchanger at the front, water connections on the right
- WH: Heat exchanger at the rear, water connections on the left
- WHR: Heat exchanger at the rear, water connections on the right

Heat exchanger

- 2: 2-pipe systems
- 4: 4-pipe systems

Nozzle variants

- M: Medium
- G: Large
- U: Extra large

Construction

- Galvanised
- P1: Powder-coated RAL 9005, black, gloss level 70 %

Attachments

- Water connection A1: G½" external thread and flat seal
- Water connection A2: G½" union nut and flat seal
- Condensate drip tray

Accessories

- W0: Wall fixing
- B0: Floor fixing
- WB: Wall and floor fixing

Useful additions

- Connecting hoses
- Control equipment consisting of a control panel including a controller with integral room temperature sensor; valves and valve actuators; and lockshields
- X-AIRCONTROL control system
- Choice of ventilation grille from our portfolio

Construction features

- Spigot is suitable for circular ducts to EN 1506 or EN 13180
- Three nozzle variants to optimise induction based on demand
- Vent valves on the heat exchanger

Materials and surfaces

- Casing, supply air grille, and primary air plenum with punched nozzles are made of galvanised sheet steel
- Exposed surfaces either galvanised or black (RAL 9005)
- Heat exchanger with copper tubes and aluminium fins

Standards and guidelines

- Products are certified by Eurovent (no. 09.12.432) and listed on the Eurovent website
- Declaration of hygiene conformity to VDI 6022

Maintenance

- No moving parts, hence low maintenance
- The heat exchanger can be vacuumed with an industrial vacuum cleaner if necessary
- VDI 6022, Part 1, applies (Hygiene requirements for ventilation and air-conditioning systems and units)

TECHNICAL INFORMATION

Function, Technical data, Quick sizing, Specification text, Order code, Related products

Functional description

Induction-type displacement flow diffusers provide centrally conditioned primary air (fresh air) to the room and use heat exchangers for cooling and/or heating.

The primary air is discharged through nozzles and induces secondary air (room air), which passes through the heat exchanger.

Primary and secondary air mix and are then supplied to the room, causing only very little turbulence.

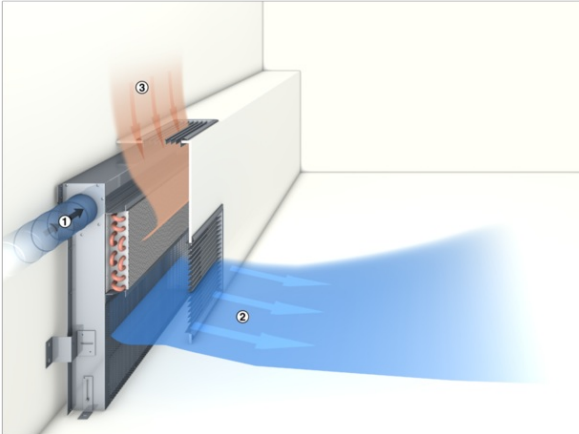
Schematic illustration of QLI



- ① Primary air spigot
- ② Heat exchanger
- ③ Water connections
- ④ Supply air grille
- ⑤ End cap

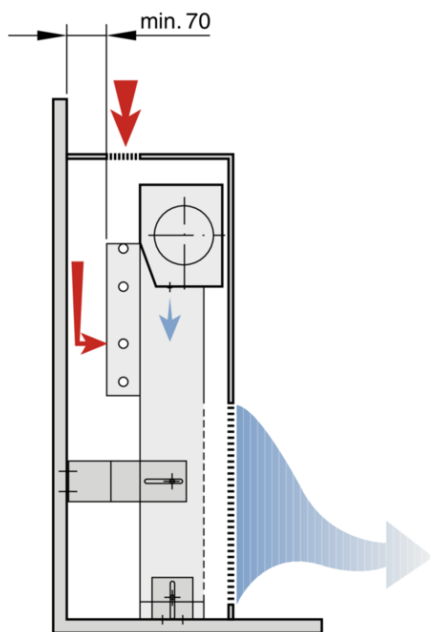
© Primary air plenum with integral nozzles

Principle of operation – QLI



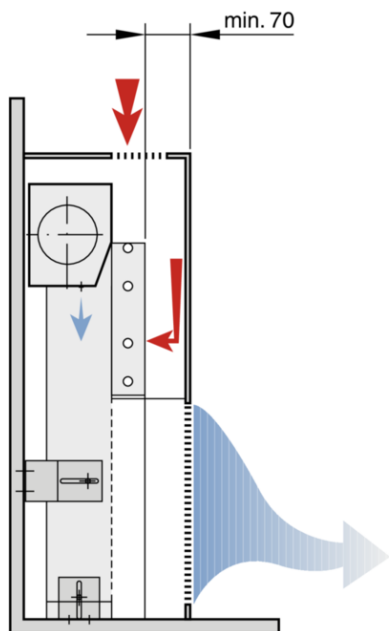
- ① Conditioned fresh air (primary air)
- ② Supply air
- ③ Room air (secondary air)

Construction WHR/L



(Water connections on the right or left as required)

Construction WVR/L



(Water connections on the right or left as required)

Nominal length	900, 1200, 1500 mm
Length	975, 1275, 1575 mm
Height	729 mm
Width	195 mm
Primary air volume flow rate	4 – 50 l/s or 14 – 180 m ³ /h
Cooling capacity	Up to 1000 W
Heating capacity	Up to 750 W
Max. operating pressure, water side	6 bar
Max. operating temperature, water side	75 °C

The quick sizing table contains operating points for defined reference units. For other operating points you may use the Easy Product Finder design software.

Quick sizing

LN	①	Primary air				Cooling				Heating		
		V _{Pr}		Δp _t	L _{WA}	2-pipe and 4-pipe systems				4-pipe system		
		l/s	m³/h	Pa		dB(A)	Q _{tot}	Q _{WK}	Δt _w	Δp _w	Q _{WH} = Q _{tot}	Δt _w
				W	K	kPa	W	K	kPa			
900	M	4	14	53	<20	237	188	1.5	3.1	228	3.9	0.2
		6	22	121	24	332	260	2.0	3.1	314	5.4	0.2
900	M	8	29	217	32	415	318	2.5	3.1	386	6.6	0.2
		7	25	40	<20	317	233	1.8	3.1	281	4.8	0.2
900	G	11	40	102	22	456	323	2.5	3.1	392	6.7	0.2
		15	54	191	31	571	391	3.1	3.1	474	8.2	0.2
900	U	17	43	42	<20	387	242	1.9	3.1	293	5.0	0.2
		19	68	108	28	550	321	2.5	3.1	389	6.7	0.2
900	U	26	94	204	37	677	364	2.8	3.1	441	7.6	0.2
1200	M	5	18	45	<20	293	233	1.8	3.8	281	4.8	0.3
		8	29	117	23	431	335	2.6	3.8	406	7.0	0.3
1200	M	11	40	222	32	548	416	3.3	3.8	505	8.7	0.3
		9	32	37	<20	401	293	2.3	3.8	355	6.1	0.3
1200	G	15	54	106	23	601	420	3.3	3.8	510	8.8	0.3
		21	46	208	33	761	508	4.0	3.8	618	10.6	0.3
1200	U	16	58	45	<20	506	313	2.4	3.8	379	6.5	0.3
		25	90	112	31	709	408	3.2	3.8	495	8.5	0.3
1200	U	34	122	207	40	871	461	3.6	3.8	560	9.6	0.3
1500	M	6	22	41	<20	347	275	2.2	4.5	333	5.7	0.4
		10	36	115	23	526	405	3.2	4.5	492	8.5	0.4
1500	M	14	50	228	33	674	505	3.9	4.5	614	10.6	0.4
		11	40	36	<20	483	350	2.7	4.5	424	7.3	0.4
1500	G	19	68	111	25	737	508	4.0	4.5	618	10.6	0.4
		27	97	225	35	939	613	4.8	4.5	747	12.9	0.4
1500	U	20	72	49	23	621	380	3.0	4.5	461	7.9	0.4
		28	101	98	33	802	464	3.6	4.5	564	9.7	0.4
1500	U	36	130	163	41	956	521	4.1	4.5	634	10.9	0.4

① Nozzle variant ② Air-regenerated noise

Reference values

Parameter	Cooling	Heating
t_R	16 °C	22 °C
t_{Pr}	16 °C	50 °C
t_{WV}	26 °C	22 °C
V_W	110 l/h	50 l/h

Induction-type displacement flow diffuser of Type QLI, with one-way discharge and high thermal output, providing high thermal comfort levels.

For installation on a wall or under the sill

The units consist of a casing with a primary air plenum, spigot, non-combustible nozzles, and vertical heat exchanger; a condensate drip tray is optional.

Special characteristics

- Low-turbulence supply air discharge as displacement flow
- Vertical heat exchanger as 2-pipe or 4-pipe system, optional condensate drip tray including condensate drain that can be connected to a condensate pipe (to be provided by others)
- Water connections at the narrow side, Ø12 mm Cu pipe, either with plain tails or with external thread or union nut, G½", flat seal

Materials and surfaces

- Casing, supply air grille, and primary air plenum with punched nozzles are made of galvanised sheet steel
- Exposed surfaces either galvanised or black (RAL 9005)
- Heat exchanger with copper tubes and aluminium fins

Construction

- Galvanised
- P1: Powder-coated RAL 9005, black, gloss level 70 %

Technical data

- Nominal length: 900, 1200, 1500 mm
- Length: 975, 1275, 1575 mm
- Height: 729 mm
- Width: 195 mm
- Primary air volume flow rate: 4 – 50 l/s or 14 – 180 m³/h
- Cooling capacity: up to 1000 W
- Heating capacity: up to 750 W
- Max. operating pressure: 6 bar
- Max. operating temperature: 75 °C

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

QLI-2-G-WVL/1200

Heat exchanger	2-pipe
Nozzle variant	Medium
Arrangement of heat exchanger and water connections	Ø12 mm pipe, plain tails
Nominal length	1200 mm

QLI-4-U-WHR-KW/1200/WB/P1/VS

Heat exchanger	4-pipe
Nozzle variant	Extra large
Arrangement of heat exchanger and water connections	At the rear, water connections on the right
Condensate drip tray	With
Nominal length	1200 mm
Fixing	Wall and floor fixing
Surface	Powder-coated black
Valves and actuators	With

QLI - 2 - M - WVR - KW / 900 / W0 / G1 / VS

1
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1 Type

QLI Under sill induction unit

2 Heat exchanger

2 2-pipe
4 4-pipe

3 Nozzle variants

M Medium
G Large
U Extra large

4 Arrangement of heat exchanger and water connections

WVL Heat exchanger at the front, water connections on the left
WVR Heat exchanger at the front, water connections on the right
WHL Heat exchanger at the rear, water connections on the left
WHR Heat exchanger at the rear, water connections on the right

5 Condensate drip tray

No entry: none
KW With

6 Nominal length [mm]

900
1200
1500

7 Fixing material (supplied separately)

No entry: none
W0 Wall fixing
B0 Floor fixing
WB Wall and floor fixing

8 Surface of casing and heat exchanger

No entry: untreated
G1 Casing powder-coated, heat exchanger coated RAL 9005, jet black
G2 Heat exchanger coated RAL 9005, jet black

9 Valves and actuators

No entry: none
VS With

Variants, Dimensions and weight



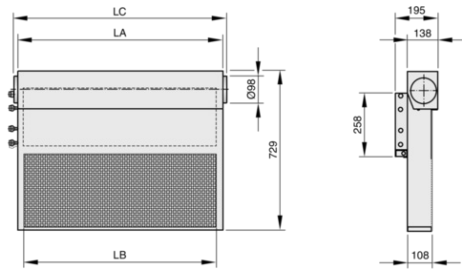
Dimensions [mm]

L _N	LA	LB	LC
900	940	883	975
1200	1240	1183	1275
1500	1540	1483	1575

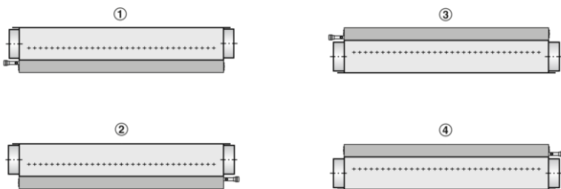
Weights

L _N	mm	900	1200	1500
Unit	kg/piece	18	24	30
Contained water (max.)	kg	1.8	2.4	3

QLI-WHL



QLI, arrangement of heat exchanger and water connections



- ① QLI-...-WVL
- ② QLI-...-WVR
- ③ QLI-...-WHL
- ④ QLI-...-WHR

Installation details, Basic information and nomenclature

Installation and commissioning

- Installation on an external wall
- Installation under the sill
- Installation and connections to be performed by others; fixing, connection and sealing material to be provided by others
- The unit can be fixed to the floor and/or to the wall with the fixing material supplied (accessory)
- Heat exchangers are fitted with water flow and water return connections at the narrow side

L_N [mm]

Nominal length

L_{WA} [dB(A)]

Sound power level

t_{Pr} [°C]

Primary air temperature

t_{WV} [C°]

Water flow temperature – cooling/heating

t_R [C°]

Room temperature

t_R [C°]

Room temperature

t_{AN} [C°]

Secondary air intake temperature

Q_{Pr} [W]

Thermal output – primary air

Q_{tot} [W]

Thermal output – total

Q_W [W]

Thermal output – water side, cooling/heating

V_{Pr} [l/s]

Primary air volume flow rate

V_{Pr} [m³/h]

Primary air volume flow rate

V_W [l/h]

Water flow rate – cooling/heating

V [l/h]

Volume flow rate

Δt_W [K]

Temperature difference – water

Δp_W [kPa]

Pressure drop, water side

Δp_t [Pa]

Total pressure drop, air side

$\Delta t_{Pr} = t_{Pr} - t_R$ [K]

Difference between primary air temperature and room temperature

$\Delta t_{RWV} = t_{WV} - t_R$ [K]

Difference between water flow temperature and room temperature

Δt_{Wm-Ref} [K]

Difference between mean water temperature and reference temperature

L_N [mm]

Nominal length

Displacement flow ventilation

The supply air is discharged into the space with a velocity between 0.15 and 0.20 m/s and as close as possible to the floor; the result is a pool of fresh air over the entire floor area. The convection from people and other heat sources causes the fresh air from the pool to rise and create comfortable conditions in the occupied zone. Displacement ventilation is characterised by low airflow velocities and low turbulence. The air quality in the occupied zone is very high. The extract air should ideally be removed near the ceiling.

Heat exchanger

The maximum water-side operating pressure for all heat exchangers is 6 bar.

The maximum water flow temperature (heating circuit) for all heat exchangers is 75 °C; if flexible hoses are used, the water flow temperature should not exceed 55 °C. Units for other pressures and temperatures are available on request.

The water flow temperature (cooling circuit) should be at least 16 °C such that it does not permanently fall below the dew point. For units with a condensate drip tray the water flow temperature may be reduced to 15 °C.

Heat exchanger as 2-pipe system

Air-water systems with a 2-pipe heat exchanger may be used for either heating or cooling. In changeover mode it is possible to use all units within a water circuit exclusively for cooling in summer and exclusively for heating in winter.

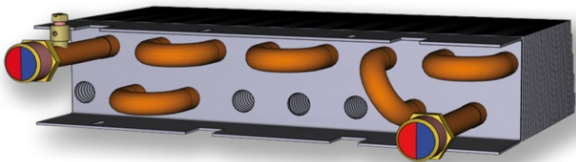
Heat exchanger as 4-pipe system

Air-water systems with a 4-pipe heat exchanger may be used for both heating and cooling. Depending on the season, i.e. especially in spring and autumn, it may be possible that an office has to be heated in the morning and cooled in the afternoon.

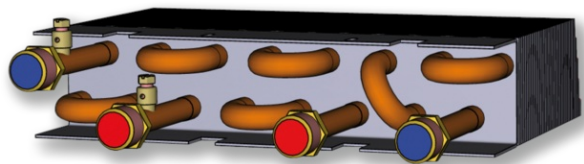
Principle of operation – QLI



Wärmeübertrager 2-Leiter-System



Heat exchanger as 4-pipe system



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