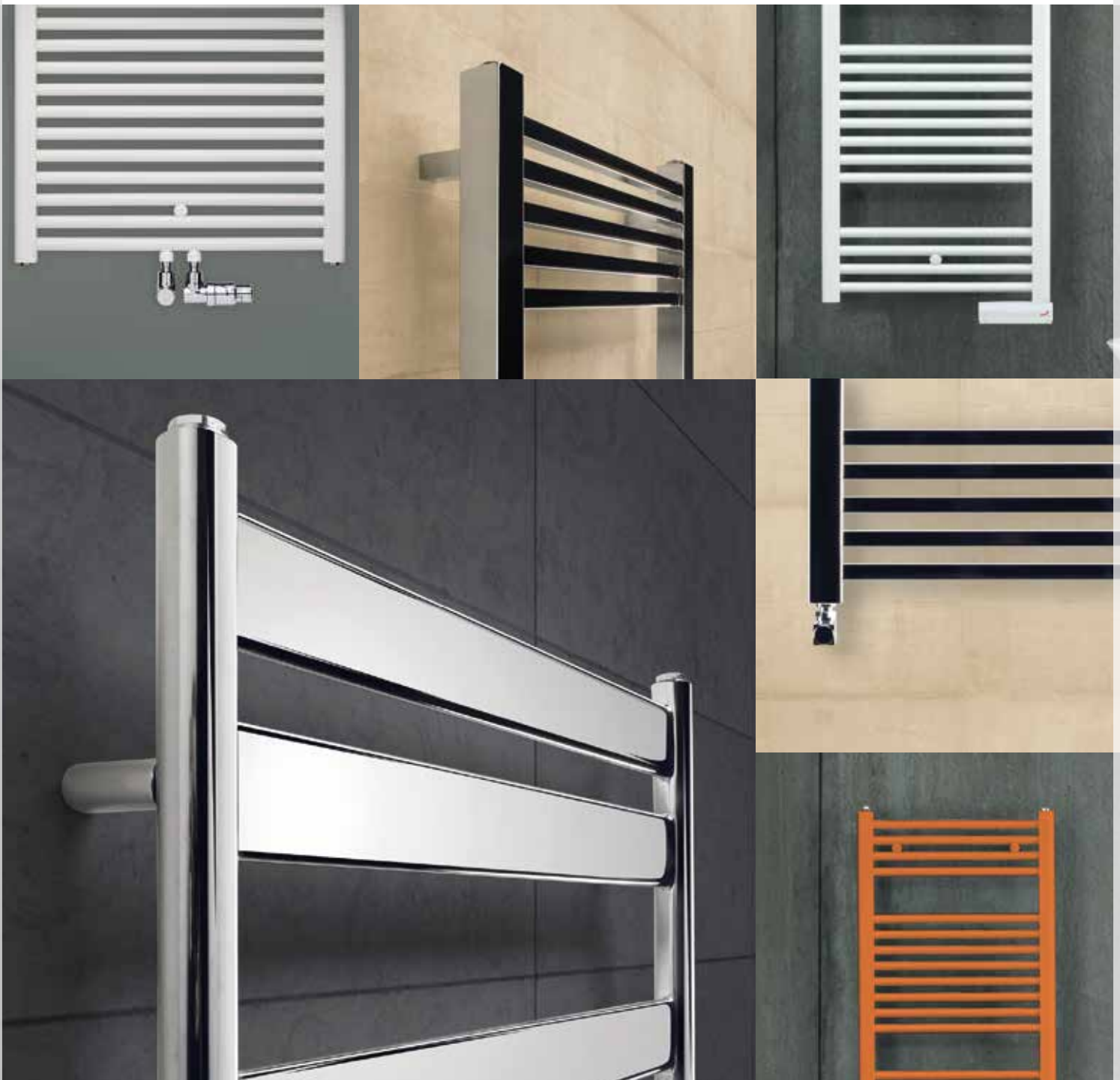


Bathroom Essentials

Design Radiators for Bathrooms

Technology 2021 – Sales International



ALWAYS THE BEST CLIMATE

“We strive to improve the quality of life by providing the finest indoor climate solutions.”



Excellent team

Every day we combine passion, expert knowledge and commitment to give you the best results.



Great solutions, products and services

Great products and unique service for an energy-efficient, healthy and comfortable indoor climate.



First choice for customers

Always close to the needs of our customers, to grow with you and overcome all challenges together.

WE ARE THE SPECIALISTS FOR A HEALTHY, COMFORTABLE AND ENERGY-EFFICIENT INDOOR CLIMATE

The broad and clearly structured portfolio from the Zehnder Group is split into four product lines. Consequently, we can provide our customers with the right product, perfect system and matching service for all types of projects – from new build to renovations, single or multi-occupancy homes, as well as commercial projects. This variety ensures that our wealth of experience is continuously expanding, providing tangible added value to our customers on a daily basis.



Decorative radiators

Our individual decorative radiators for living and bathrooms make a home not only warmer but also more attractive. Created by renowned designers, they impress with excellent functionality.



Comfortable indoor ventilation

Our comfortable indoor ventilation is energy-efficient and provides a healthy indoor climate. It promotes the wellbeing of the occupants and increases the value of the property.



Heating and cooling ceiling systems

Zehnder ceiling systems are convenient and energy-efficient for heating and cooling. They are perfectly attuned to the relevant environment.
















Clean air solutions


Clean air systems from Zehnder reduce the level of dust in the air, create a healthier working environment and reduce the amount of cleaning required.


OUR BRANDS REPRESENT INNOVATION, QUALITY AND DESIGN




The Zehnder brand offers excellent indoor climate solutions within the product lines of decorative radiators, comfortable indoor ventilation, heating and cooling ceiling systems and clean air solutions.

Design Raditor		Zehnder Virando	  	AB..	4
		Zehnder Virando Bow	 	ABT..	8
		Zehnder Impa	 	IMP..	12
		Zehnder Zeta	 	PQ6..	15
Accessories and general information	Accessories				18
	Thermostats & Valves				20
	Conversion factors				24
	Keyword list				25
	Colour system				31

 Operation on central heating system

 Dual energy operation possible on site*

 Electric operation*

* Additional information about the versions with electric operation and dual energy operation is available on the respective product pages.

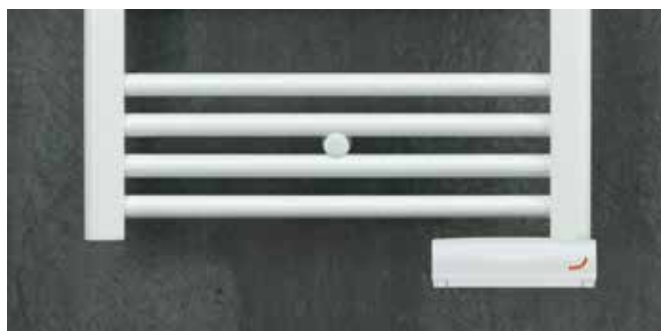
General Sales and Delivery Conditions:

Our General Sales and Delivery Conditions apply. You can find these under “Legal notice” on our homepage at www.international.zehnder-systems.com.

Zehnder Virando



Radiator surface: Orange Quartz



Radiator for electric operation with TIMERMEMO

Hot water operation

Clarity and class. Zehnder Virando has what any lover of modern style looks for. A clear design, with horizontal and straight tube elements allows for ample space for hanging towels. Zehnder Virando designer radiator made from horizontally arranged precision steel tubes with vertical D-profile tubes. Round tubes Ø 23 mm, D-tubes 30 x 40 mm. Available in almost any colour and finish from the Zehnder colour chart. Delivered ready to install with matching wall brackets, packaging.

Maximum operating pressure
Operating temperature

max. 12 bar
max. 120 °C

Benefits

- Timeless design creates an aesthetic accent
- Generous spaces between the tubes convenient for hanging towels
- Top-grade chrome finish
- Ample spaces between tubes make cleaning easy
- Flexible installation due to 50 mm centre connections

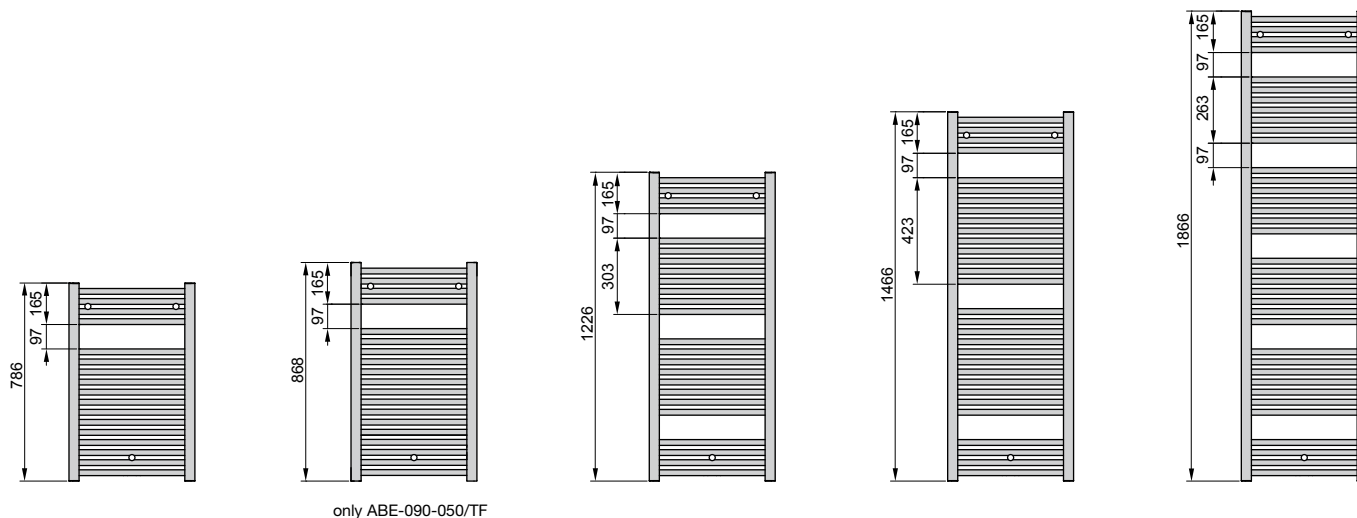
Special benefits for electric operation with TIMERMEMO

- Energy-efficient and comfortable heating via innovative “open window detection”
- Low energy consumption of only 0,5 W in stand-by mode for increased energy efficiency
- Operation by smartphone with Zehnder Control app
- Comfortable operation as needed by customisable daily and weekly programme
- Timer function for on-demand operation
- With flying lead to connect in accordance with local electrical regulations



Zehnder Virando

Overview of models



Connection to hot water central heating system or for mixed operation

Painted version, connection from bottom

Model	H mm	L mm	Thermal output				Exp. n	Classification immersion heater Watt	V dm ³	M kg
			EN 442 ^① Watt	70/55/24 Watt	55/45/24 Watt	55/45/20 Watt				
AB-080-045	786	450	344	244	149	179	1,26	300	3,6	5,6
AB-120-045	1226	450	505	358	218	262	1,27	300	5,3	8,2
AB-080-050	786	500	379	269	164	197	1,26	300	3,9	6,0
AB-120-050	1226	500	552	391	237	286	1,27	300	5,7	9,0
AB-150-050	1466	500	678	481	293	353	1,27	600	7,2	11,0
AB-180-050	1866	500	830	590	360	433	1,26	600	8,7	13,5
AB-080-060	786	600	448	318	194	234	1,26	300	4,6	7,0
AB-120-060	1226	600	648	460	280	337	1,26	600	6,6	10,0
AB-150-060	1466	600	794	565	346	415	1,25	600	8,2	12,7
AB-180-060	1866	600	978	697	427	512	1,25	900	9,9	16,0
AB-120-075	1226	750	791	562	343	412	1,26	600	7,9	12,4
AB-150-075	1466	750	968	691	424	509	1,24	900	9,7	15,2
AB-180-075	1866	750	1230	879	540	648	1,24	900	11,7	18,4

Available in almost any colour and finish from the Zehnder colour chart, see page 31.

Painted version, connection central 50 mm

Model	H mm	L mm	Thermal output				Exp. n	Classification immersion heater Watt	V dm ³	M kg
			EN 442 ^① Watt	70/55/24 Watt	55/45/24 Watt	55/45/20 Watt				
AB-080-045-05	786	450	344	244	149	179	1,26	300	3,6	5,9
AB-080-050-05	786	500	379	269	164	197	1,26	300	3,9	6,3
AB-120-050-05	1226	500	552	393	240	288	1,26	300	5,7	9,3
AB-150-050-05	1466	500	678	481	293	353	1,27	600	7,2	11,3
AB-180-050-05	1866	500	830	590	360	433	1,26	600	8,7	13,8
AB-120-060-05	1226	600	648	460	281	337	1,26	600	6,6	10,3
AB-150-060-05	1466	600	794	565	346	415	1,25	600	8,2	13,0
AB-180-060-05	1866	600	978	697	427	512	1,25	900	9,9	16,3

Available in almost any colour and finish from the Zehnder colour chart, see page 31.

① Thermal output measured according to EN 442, ΔT 50 K (75/65/20 °C)

Connection to hot water central heating system or for dual energy operation

Chrome-plated version, connection from below

Model	H mm	L mm	Thermal output				Exp. n	Classification Electric heating element Watt	V dm ³	M kg
			EN 442① Watt	70/55/24 Watt	55/45/24 Watt	55/45/20 Watt				
ABC-080-050	786	500	277	198	122	146	1,24	-	3,9	6,0
ABC-120-050	1226	500	403	286	174	209	1,27	300	5,7	9,0
ABC-150-050	1466	500	483	345	212	254	1,24	300	7,2	11,0
ABC-180-050	1866	500	606	433	266	319	1,24	600	8,7	14,0
ABC-080-060	786	600	327	234	144	172	1,24	300	4,6	7,0
ABC-120-060	1226	600	473	336	205	247	1,26	300	6,6	10,0
ABC-150-060	1466	600	558	399	245	294	1,24	300	8,2	12,7
ABC-180-060	1866	600	714	509	312	374	1,25	600	9,9	16,0

Chrome-plated version, connection central 50 mm

Model	H mm	L mm	Thermal output				Exp. n	Classification Electric heating element Watt	V dm ³	M kg
			EN 442① Watt	70/55/24 Watt	55/45/24 Watt	55/45/20 Watt				
ABC-080-050-05	786	500	277	198	122	146	1,24	-	3,9	6,0
ABC-120-050-05	1226	500	403	286	174	209	1,27	300	5,7	9,0
ABC-150-050-05	1466	500	483	345	212	254	1,24	300	7,2	11,0
ABC-180-050-05	1866	500	606	433	266	319	1,24	600	8,7	14,0
ABC-080-060-05	786	600	327	234	144	172	1,24	300	4,6	7,0
ABC-120-060-05	1226	600	473	336	205	247	1,26	300	6,6	10,0
ABC-150-060-05	1466	600	558	399	245	294	1,24	300	8,2	12,7
ABC-180-060-05	1866	600	714	509	312	374	1,25	600	9,9	16,0

Electric-only operation with TIMERMEMO

Painted version

Model	H② mm	L③ mm	Classification Electric heating element Watt
ABE-090-050/TF	916	509	500
ABE-120-050/TF	1276	509	750
ABE-150-060/TF	1516	609	1000

Available in almost any colour and finish from the Zehnder colour chart, see page 31.
Control unit TIMERMEMO in white.

Standard scope of delivery for hot water operation

- Powder coating to DIN 55900, RAL 9016
- 4 x ½" connections for flow, return, air vent and plug
- 1 air vent ½" and 1 blind plug ½"
- Mounting accessories in colour of radiator
- Packaging

Standard scope of delivery for electric operation

- Powder coating to DIN 55900, RAL 9016
- Filled with heat transfer liquid
- With integrated electric heating element and control unit TIMERMEMO in white, right-mounted
- Mounting accessories in colour of radiator
- Packaging

① Thermal output measured according to EN 442, ΔT 50 K (75/65/20 °C)

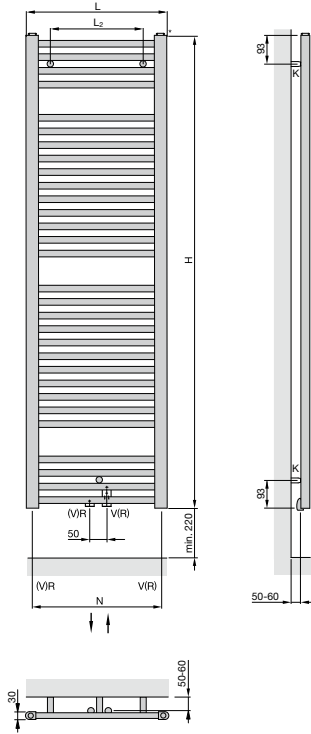
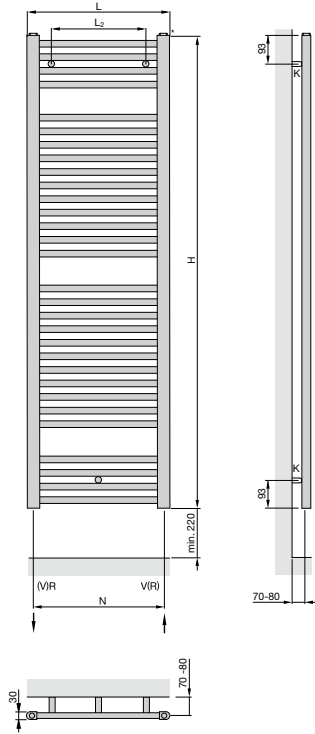
② Total height incl. immersion heater

③ Total length incl. immersion heater

Zehnder Virando

Hot water operation:
Wall mounting

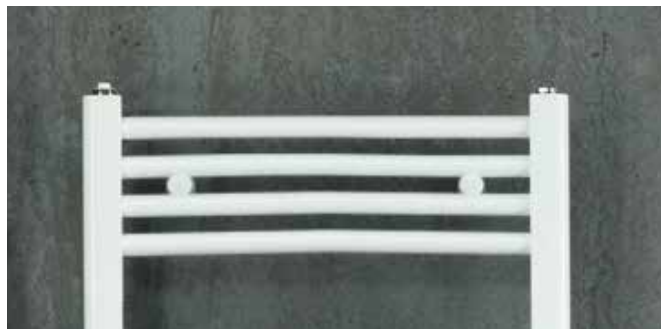
Wall mounting
centre connections 50 mm



- H = Height
- L = Length
- K = Bracket
- V = Flow 1/2"
- R = Return 1/2"
- N = Boss spacing, L - 44 mm
- L₂ = Length - 150 mm

Dimensions in mm

Zehnder Virando Bow



Radiator surface: Flame Red

Hot water operation

Clarity and class. Zehnder Virando Bow has what any lover of modern style looks for. A clear design, with horizontal and straight tube elements allows for ample space for hanging towels. Zehnder Virando Bow designer radiator made from horizontally arranged precision curved steel tubes with vertical D-profile tubes. Round tubes Ø 23 mm, D-tubes 30 x 40 mm. Available in almost any colour and finish from the Zehnder colour chart. Delivered ready to install with matching wall brackets, packaging.

Benefits

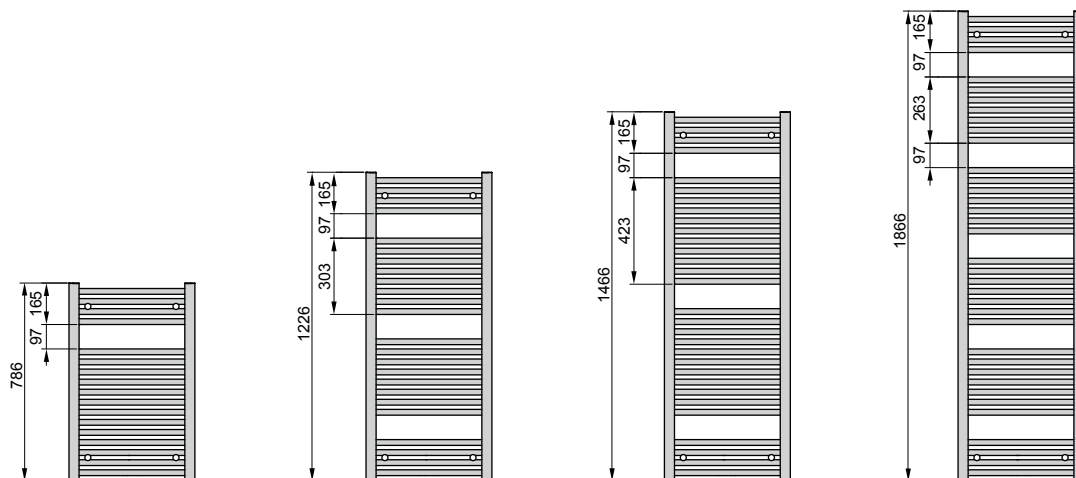
- Timeless design creates an aesthetic accent
- Generous spaces between the tubes convenient for hanging towels
- Top-grade chrome finish
- Ample spaces between tubes make cleaning easy
- Flexible installation due to 50 mm centre connections

Maximum operating pressure
Operating temperature

max. 12 bar
max. 120 °C

Zehnder Virando Bow

Overview of models



Connection to hot water central heating system or for dual energy operation

Painted version, connection from bottom

Model	H mm	L mm	Thermal output				Exp. n	Classification Electric heating element Watt	V dm ³	M kg
			EN 442① Watt	70/55/24 Watt	55/45/24 Watt	55/45/20 Watt				
ABT-080-050	786	494	398	283	173	208	1,26	300	4,0	6,2
ABT-120-050	1226	494	567	405	248	298	1,25	300	5,9	9,0
ABT-150-050	1466	494	689	491	301	361	1,25	600	7,1	11,1
ABT-180-050	1866	494	828	589	360	433	1,26	600	8,8	13,4
ABT-080-060	786	595	463	331	204	244	1,24	300	4,6	7,1
ABT-120-060	1226	595	658	469	288	345	1,25	600	6,7	10,3
ABT-150-060	1466	595	803	573	351	421	1,25	600	8,1	12,7
ABT-180-060	1866	595	966	687	419	504	1,26	900	10,0	15,4
ABT-120-075	1226	747	799	570	350	419	1,25	600	8,0	12,2
ABT-150-075	1466	747	978	698	428	514	1,25	900	9,7	15,2
ABT-180-075	1866	747	1178	836	509	612	1,27	900	11,8	18,4

Available in almost any colour and finish from the Zehnder colour chart, see page 31.

Painted version, connection central 50 mm

Model	H mm	L mm	Thermal output				Exp. n	Classification Electric heating element Watt	V dm ³	M kg
			EN 442① Watt	70/55/24 Watt	55/45/24 Watt	55/45/20 Watt				
ABT-080-050-05	786	494	398	283	173	208	1,24	300	4,0	6,5
ABT-120-050-05	1226	494	567	405	248	298	1,25	300	5,9	9,3
ABT-150-050-05	1466	494	689	491	301	361	1,25	600	7,1	11,4
ABT-180-050-05	1866	494	828	589	360	433	1,26	600	8,8	13,7
ABT-080-060-05	786	595	463	331	204	244	1,24	300	4,6	7,4
ABT-120-060-05	1226	595	658	469	288	345	1,25	600	6,7	10,6
ABT-150-060-05	1466	595	803	573	351	421	1,25	600	8,1	13,0
ABT-180-060-05	1866	595	966	687	419	504	1,26	900	10,0	15,7
ABT-120-075-05	1226	747	799	570	350	419	1,25	600	8,0	12,5
ABT-150-075-05	1466	747	978	698	428	514	1,25	900	9,7	15,5
ABT-180-075-05	1866	747	1178	836	509	612	1,27	900	11,8	18,7

Available in almost any colour and finish from the Zehnder colour chart, see page 31.

① Thermal output measured according to EN 442, ΔT 50 K (75/65/20 °C)

Zehnder Virando Bow

**Connection to hot water central heating system or for dual energy operation**

Chrome-plated version, connection from below

Model	H mm	L mm	Thermal output				Exp. n	Classification Electric heating element Watt	V dm ³	M kg
			EN 442① Watt	70/55/24 Watt	55/45/24 Watt	55/45/20 Watt				
ABTC-080-050	786	494	276	196	119	144	1,26	-	4,0	6,2
ABTC-120-050	1226	494	411	291	177	213	1,27	300	5,9	9,0
ABTC-150-050	1466	494	485	346	212	254	1,25	300	7,1	11,1
ABTC-180-050	1866	494	611	435	265	319	1,26	600	8,8	13,4
ABTC-080-060	786	595	326	231	141	170	1,26	300	4,6	7,1
ABTC-120-060	1226	595	484	344	209	252	1,26	300	6,7	10,3
ABTC-150-060	1466	595	572	407	249	299	1,25	300	8,1	12,7
ABTC-180-060	1866	595	720	512	313	376	1,26	600	10,0	15,4

Chrome-plated version, connection central 50 mm

Model	H mm	L mm	Thermal output				Exp. n	Classification Electric heating element Watt	V dm ³	M kg
			EN 442① Watt	70/55/24 Watt	55/45/24 Watt	55/45/20 Watt				
ABTC-080-050-05	786	494	276	196	119	144	1,26	-	4,0	6,5
ABTC-120-050-05	1226	494	411	292	178	214	1,26	300	5,9	9,3
ABTC-150-050-05	1466	494	485	346	212	254	1,25	300	7,1	11,4
ABTC-180-050-05	1866	494	611	435	265	319	1,26	600	8,8	13,7
ABTC-080-060-05	786	595	326	231	141	170	1,26	300	4,6	7,4
ABTC-120-060-05	1226	595	484	344	209	252	1,26	300	6,7	10,6
ABTC-150-060-05	1466	595	572	407	249	299	1,25	300	8,1	13,0
ABTC-180-060-05	1866	595	720	513	314	377	1,25	600	10,0	15,7

Standard scope of delivery for hot water operation

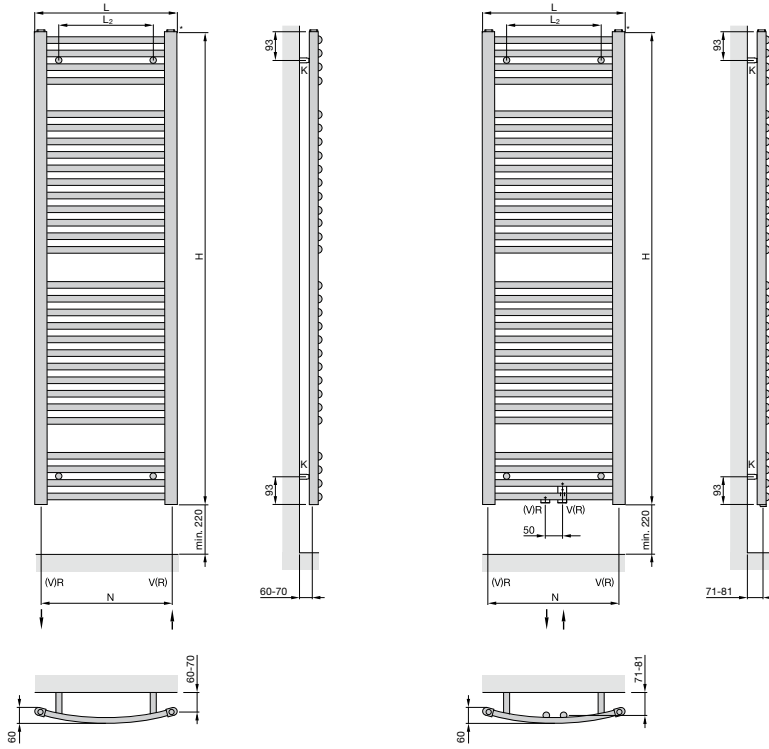
- Powder coating to DIN 55900, RAL 9016
- 4 x ½" connections for flow, return, air vent and plug
- 1 air vent ½" and 1 blind plug ½"
- Mounting accessories in colour of radiator
- Packaging

① Thermal output measured according to EN 442, ΔT 50 K (75/65/20 °C)

Zehnder Virando Bow

Hot water operation:
Wall mounting

Wall mounting
centre connections 50 mm



- H = Height
- L = Length
- K = Bracket
- V = Flow 1/2"
- R = Return 1/2"
- N = Boss spacing, L - 44 mm
- L₂ = Length - 150 mm

Dimensions in mm

Zehnder Impa



Radiator surface: Chrome

Operation on hot water central heating system

Zehnder Impa stands out because of its subtle elegance and practical functionality. The geometric design with the square tube elements is a perfect fit for any bathroom. The generous clearance between the sets of tubes makes hanging and warming towels easy. The radiator is available in white and with a high-quality chrome finish.

Benefits

- Timeless design with square headers is ideal for classic bathrooms
- Small radiator depth ideal for narrow rooms
- Easy cleaning with the lambswool cleaning brush from Zehnder
- Generous spaces between the tubes convenient for hanging towels

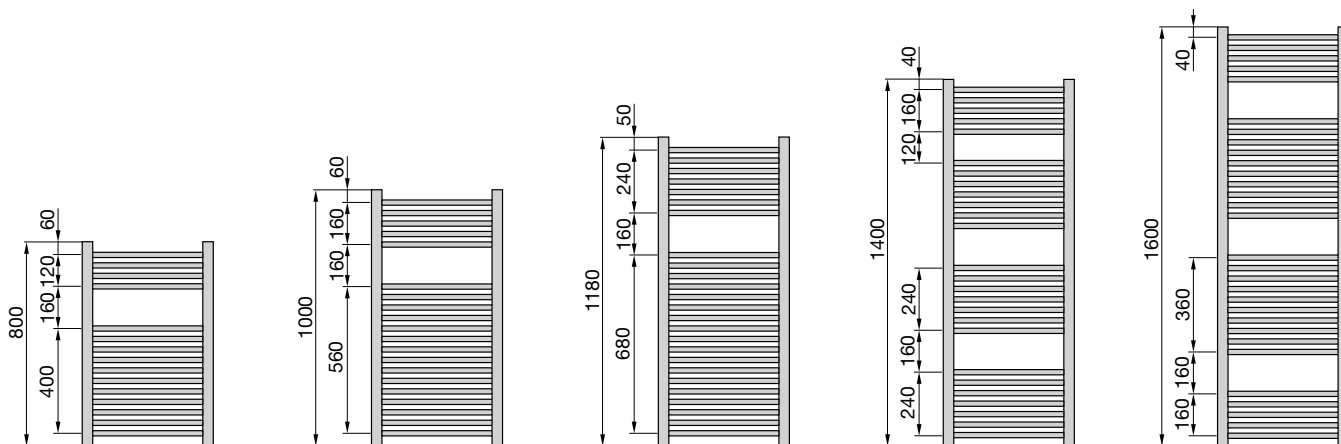
Standard scope of delivery

- Powder coating to DIN 55900, RAL 9016
- 4 x 1/2" connections for flow/ return, air vents
- 1 x blind plug 1/2"
- 1 x air vent 1/2"
- Accessories in colour of radiator
- Packaging

Maximum operating pressure	max. 13,0 bar
Operating temperature	max. 90 °C
Height mm
Length mm
Model

Zehnder Impa

Overview of models



Connection to hot water central heating system or for dual energy operation

Minimum quantity per order:
10 pcs

Painted version

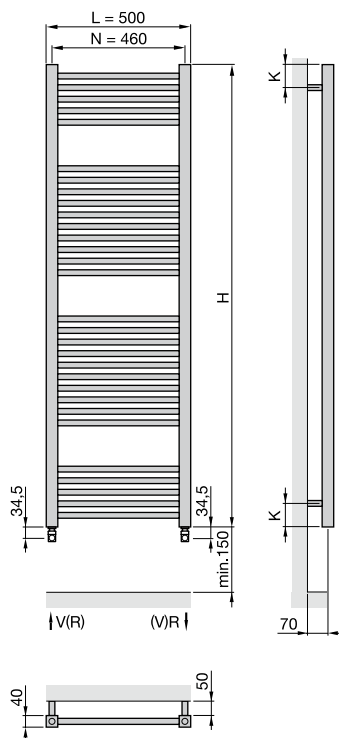
Model	H mm	L mm	Thermal output				Exp. n	Classification Electric heating element Watt	V dm ³	M kg
			EN 442 ³ Watt	70/55/24 Watt	55/45/24 Watt	55/45/20 Watt				
IMP-080-050	800	500	364	262	163	194	1,22	300	4,2	7,3
IMP-100-050	1000	500	460	330	203	244	1,23	300	5,4	9,5
IMP-120-050	1180	500	548	392	241	289	1,24	300	6,5	11,5
IMP-140-050	1400	500	636	453	278	333	1,25	600	7,4	13,0
IMP-160-050	1600	500	717	510	311	374	1,26	600	8,3	14,5

Chrome-plated version

Model	H mm	L mm	Thermal output				Exp. n	Classification Electric heating element Watt	V dm ³	M kg
			EN 442 ³ Watt	70/55/24 Watt	55/45/24 Watt	55/45/20 Watt				
IMPC-080-050	800	500	214	152	93	112	1,26	-	4,2	7,2
IMPC-100-050	1000	500	272	193	117	141	1,27	-	5,4	9,3
IMPC-120-050	1180	500	323	228	138	167	1,28	300	6,5	11,3
IMPC-140-050	1400	500	387	273	164	199	1,29	300	7,4	12,8
IMPC-160-050	1600	500	445	313	188	227	1,30	300	8,3	14,1

© Thermal output measured according to EN 442, ΔT 50 K (75/65/20 °C)

**Connection to hot water central heating system:
Wall mounting**



- H = Height
- L = Length
- K = Bracket (H800/H1000=100;
H1180=90; H1400/H1600=80)
- V = Flow 1/2"
- R = Return 1/2"
- N = Boss spacing

Dimensions in mm

Accessories (surcharge)	Article number
<ul style="list-style-type: none"> ■ Electric heating element for dual energy operation 	-
<ul style="list-style-type: none"> ■ Valve type W: square-shaped, chrome, angled, lockshield with manual handwheel incl. 2 pcs. 3/4" Eurocone nuts 16,8 mm in finish of valve body, without adaptors for pipes 	839198

Zehnder Zeta



Radiator colour: Traffic White



Radiator surface: Chrome

Connecting to hot water central heating system

Subtle elegance and clear lines. With the flat design of its horizontal tube elements 60 x 9 mm, Zehnder Zeta combines form and function in the bathroom. The generous clearance between the sets of tubes makes hanging and warming towels easy. The radiator is available in white and with a quality chrome finish.

Maximum operating pressure	max. 4,0 bar
Operating temperature	max. 90 °C
Height mm
Length mm
Model

Benefits

- Radiator with flat design
- Flexible installation through right and left connection options

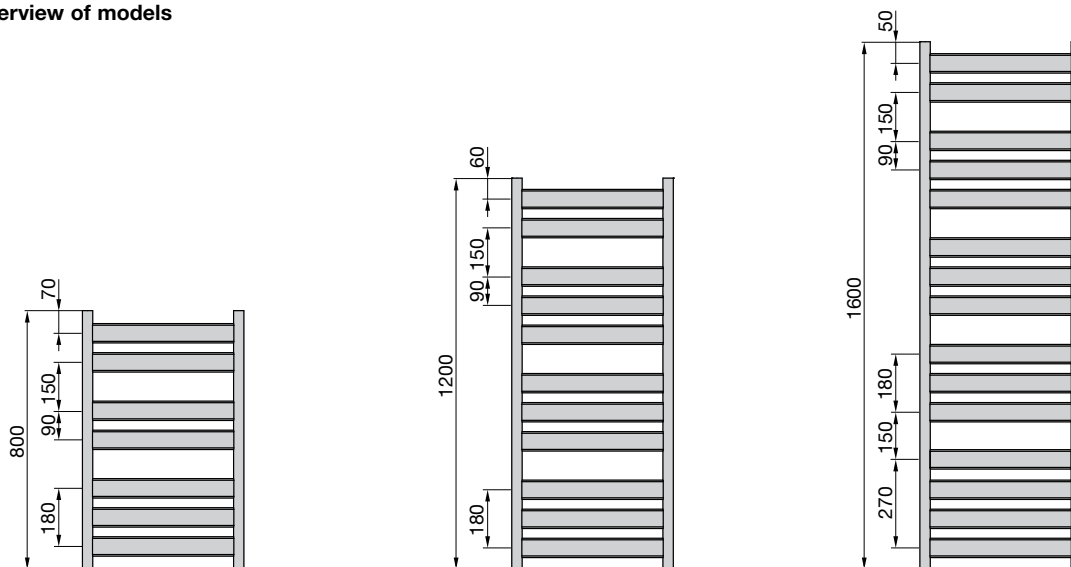
Standard scope of delivery

- Powder coating to DIN 55900, RAL 9016
- 4 x ½" connections for flow/ return, air vents
- 1 x blind plug ½"
- 1 x air vent ½"
- Accessories in colour of radiator
- Packaging

Zehnder Zeta



Overview of models



Connection to hot water central heating system

Minimum quantity per order: 10 pcs

Painted version (White RAL 9016)

Model	H mm	L mm	Thermal output				Exp. n	Classification Electric heating element Watt	V dm ³	M kg
			EN 442 ^③ Watt	70/55/24 Watt	55/45/24 Watt	55/45/20 Watt				
PQ6-080-050	800	500	322	230	141	170	1,24	300	2,2	6,4
PQ6-120-050	1200	500	476	340	209	253	1,24	300	3,7	10,1
PQ6-160-050	1600	500	647	463	285	340	1,23	600	4,6	13,3
PQ6-080-060	800	600	377	271	168	201	1,22	300	2,6	7,4
PQ6-120-060	1200	600	566	405	249	298	1,22	300	4,4	11,3
PQ6-160-060	1600	600	746	533	328	397	1,23	600	5,5	15,3

Painted version (Anthracite RAL 0346)

Model	H mm	L mm	Thermal output				Exp. n	Classification Electric heating element Watt	V dm ³	M kg
			EN 442 ^③ Watt	70/55/24 Watt	55/45/24 Watt	55/45/20 Watt				
PQ6-120-050-0346	1200	500	476	340	209	253	1,24	300	3,7	10,1
PQ6-120-060-0346	1200	600	566	405	249	298	1,22	300	4,4	11,3
PQ6-160-060-0346	1600	600	746	533	328	397	1,23	600	5,5	15,3

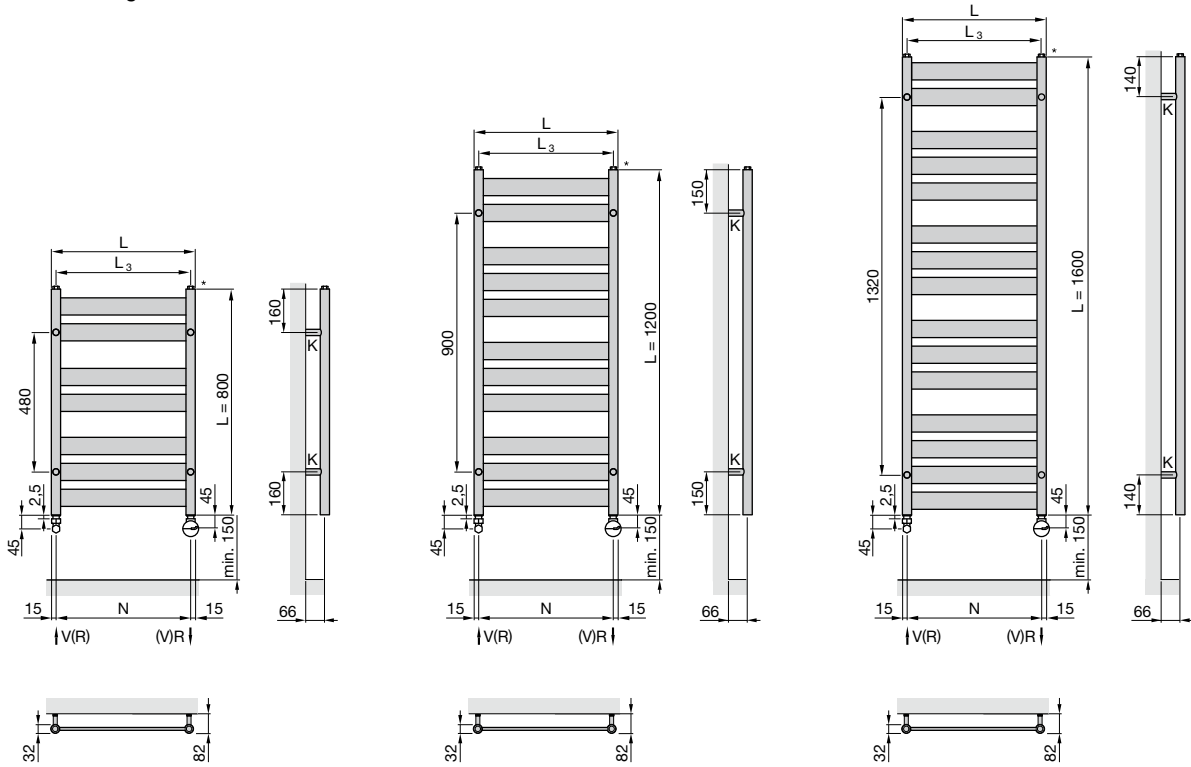
Chrome-plated version

Model	H mm	L mm	Thermal output				Exp. n	Classification Electric heating element Watt	V dm ³	M kg
			EN 442 ^③ Watt	70/55/24 Watt	55/45/24 Watt	55/45/20 Watt				
PQ6C-080-050	800	500	203	144	88	106	1,26	-	2,2	6,4
PQ6C-120-050	1200	500	303	214	130	156	1,28	300	3,7	10,0
PQ6C-160-050	1600	500	394	279	169	205	1,27	300	4,6	13,2
PQ6C-080-060	800	600	235	168	103	123	1,25	-	2,6	7,4
PQ6C-120-060	1200	600	353	250	151	183	1,27	300	4,4	11,4
PQ6C-160-060	1600	600	457	322	194	237	1,28	300	5,5	15,3

③ Thermal output measured according to EN 442, ΔT 50 K (75/65/20 °C)

Zehnder Zeta

Operation on hot water central heating system:
Wall mounting



- H = Height
- L = Length
- K = Bracket
- V = Flow ½"
- R = Return ½"
- N = Boss spacing, L - 32 mm
- L₃ = Length - 32 mm

Dimensions in mm

Accessories (surcharge)	Article number
■ Electric heating element for dual energy operation	-
■ Zehnder valves, lockshield valves and connection fittings	-
■ Zehnder thermostats	-

Mounting sets for repeat ordering

Description		Version	Article number	Application
Mounting set 4 wall brackets with threaded pin; 4 plastic anchors; 4 screws 5,5 x 50 mm, 4 washers; 1 air vent ½", 1 blanking plug ½"; 1 Allen key 2,5 mm	Without illustration	White Chrome-plated Cat.1 and 2	926281 926288 926289	Zehnder Virando
Mounting set 4 wall brackets with threaded pin; 4 plastic anchors; 4 screws 5,5 x 50 mm, 4 washers; 1 air vent ½", 1 blanking plug ½"; 1 Allen key 2,5 mm	Without illustration	White Chrome-plated Cat.1 and 2	926191 926198 926199	Zehnder Virando Bow
Mounting set 4 wall brackets with threaded pin; 4 plastic anchors; 4 screws 5,5 x 50 mm, 4 washers; 1 air vent ½", 1 blanking plug ½"; 1 Allen key 2,5 mm	Without illustration	White Chrome-plated	926731 926738	Zehnder Impa
Mounting set 4 wall brackets with threaded pin; 4 plastic anchors; 4 screws 5,5 x 50 mm, 4 washers; 1 air vent ½", 1 blanking plug ½"; 1 Allen key 2,5 mm	Without illustration	White Anthracite Chrome-plated	926681 926680 926688	Zehnder Zeta

¹⁾ In the case of radiators with centre connections, the original scope of delivery includes two additional blanking plugs.

Electric heating elements for dual energy operation

Electric heating element DBM ²⁾

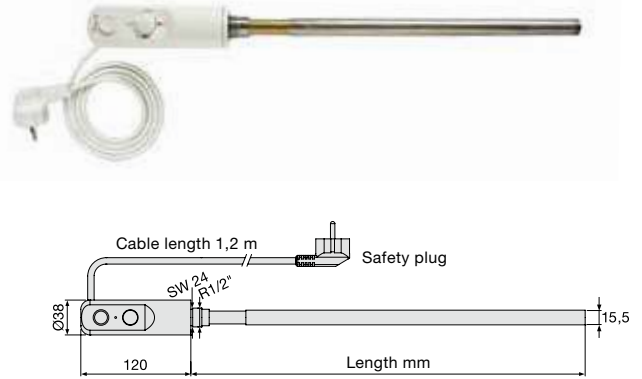
Degree of protection IP44 (splash-proof), for supply voltage 230 V ±10%. With G ½" screw-in thread and 3-core connection cable (1,2 m) with safety plug, collar and assembly key. With dry-running protection against operation without sufficient filling quantity. With rotary knob for selecting the following operating modes:

- Medium temperature max. 40°C
- Medium temperature max. 70°C
- Timer with automatic shut-off after 2 hours
- Off



Model	Nominal output Watt	Max. length in mm	Article number
DBM 300 white	300	330	857461
DBM 300 chrome	300	330	857468
DBM 600 white	600	480	857481
DBM 600 chrome	600	480	857488
DBM 900 white	900	630	857501
DBM 900 chrome	900	630	857508
DBM 1200 white	1200	800	857521

Suitable for design radiators: Virando, Impa, Zeta



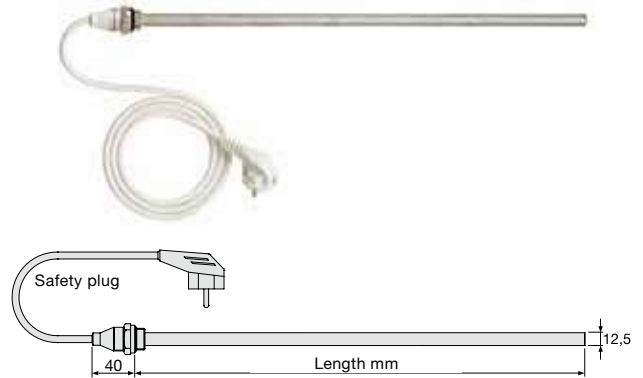
Electric heating element RICA ²⁾

Degree of protection IP54 (splash-proof), for mains voltage of 230 V ±10%. With G ½" screw-in thread and 3-core connection cable (1,2 m) with safety plug. With integrated temperature controller, with fixed nominal value of 70°C and safety temperature limiter, without dry-running protection. (The electric heating element must be replaced after activation of the temperature limiter. Cannot be repaired!)



Model	Nominal output Watt	Max. length in mm	Article number
RICA 300	300	450	893100
RICA 600	600	700	893200
RICA 900	900	900	893300
RICA 1200	1200	1200	893400

Suitable for design radiators: Virando, Impa, Zeta



T-piece

For dual energy operation of hot water central heating system with electric heating element. Installation of the T-piece in the return for vertical installation of the electric heating elements RICA or DBM¹⁾ and connection of the return via an angled return screw connection.











Model	Article number
T-piece white (WIVAR, RICA)	853181
T-piece chrome (WIVAR, RICA)	853188
T-piece white (DBM)	853111
T-piece chrome (DBM)	853118




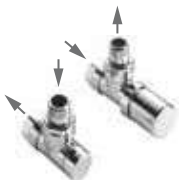

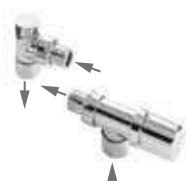

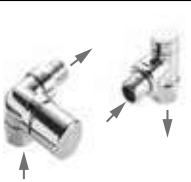
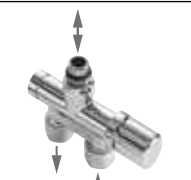
¹⁾ T-piece for DBM incl. O-ring and collar

²⁾ Can be used in hot water heating systems with max. operating temperature of 95°C and maximum operating pressure of 4,0 bar

Thermostats

Description		Version	Article number	Application
Zehnder thermostat "Design Line" Thermostat with integrated fluid sensor. Can be restricted and locked to individual reference value of 6,5 - 28 °C, connection for thermostat M 30 x 1,5		White Chrome Stainless steel optic	841271 841278 853720	For all radiators with threaded connection M 30 x 1,5 mm
Zehnder thermostat "LH2" Thermostat with integrated fluid sensor, tested according to EN 215. Can be limited and blocked to individual nominal value. Reference range value 7 to 28 °C. Version with zero setting, thermostat threaded connection M 30 x 1,5		White Chrome	819140 819148	
Zehnder thermostat "DH" Thermostat with integrated expansion material sensor, reference value range 7 to 28 °C. Version with zero setting. Threaded connection M 30 x 1,5 with cover of union nut		White Chrome	819050 819058	
Zehnder thermostat "SH" Elegant thermostat with integrated fluid sensor, tested according to EN 215, reference value range 7 to 28 °C. Version with zero setting. Thermostat threaded connection M 30 x 1,5 with chrome-plated union nut		White Chrome Stainless steel	819080 819088 819082	
Angle adapter for thermostat M 30 x 1,5		White	819500	
Directional air vent, nickel-plated, self-sealing		¼" ½"	816010 816030	
Decorative directional air vent set, chrome Comprising 2 x directional air vents (½") with cover, vent tool and plug key		Chrome	816508	
Directional air vent, chrome-plated, self-sealing Suitable for max. operating pressure of 18 bar		½"	816070	
Blanking plug, nickel-plated, self-sealing		½"	974020	
Blanking plug, chrome-plated Suitable for max. operating pressure of 18 bar		½"	974058	

Zehnder Design Line Valves

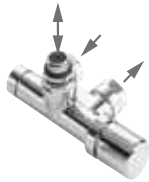
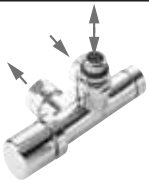




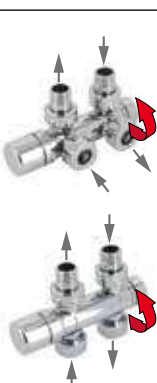
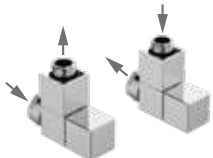
Description		Version	Article nr.	Application
Valve set type A Angled flow and lockshield, thermostatic insert M 30 x 1,5 mm with pre-setting 1-7, manual handwheel, including 2 pcs 3/4" Eurocone nuts Ø 16,8 mm in finish of valve body, without adaptors for pipes		White Chrome	838881 838888	For all radiators with threaded connection M 30 x 1,5 mm
Valve set type B Angled flow and lockshield, manual handwheel thermostatic insert M 30 x 1,5 mm with pre-setting 1-7, including 2 pcs 3/4" Eurocone nuts Ø 16,8 mm in finish of valve body, without adaptors for pipes		White Chrome Stainless steel optic	838891 838898 838930	
Valve set type C Straight flow and lockshield, manual handwheel thermostatic insert M 30 x 1,5 mm with pre-setting 1-7, including 2 pcs 3/4" Eurocone nuts Ø 16,8 mm in finish of valve body, without adaptors for pipes		White Chrome	838941 838948	
Valve set type D Reverse flow and angled lockshield, manual handwheel thermostatic insert M 30 x 1,5 mm with pre-setting 1-7, including 2 pcs 3/4" Eurocone nuts Ø 16,8 mm in finish of valve body, without adaptors for pipes		White Chrome	838951 838958	
Valve set type G Angled-angled flow head to the left, thermostatic insert M 30 x 1,5 mm with pre-setting 1-7, manual handwheel, lockshield angled, including 2 pcs 3/4" Eurocone nuts Ø 16,8 mm in finish of valve body, without adaptors for pipes		White Chrome Stainless steel optic	838981 838988 838980	
Valve set type I Angled-angled flow head to the right, manual handwheel, thermostatic insert M 30 x 1,5 mm with pre-setting 1-7, lockshield angled, including 2 pcs 3/4" Eurocone nuts Ø 16,8 mm in finish of valve body, without adaptors for pipes		White Chrome Stainless steel optic	838991 838998 838990	
Valve set type J Single entry/monotube valve vertical, straight, with by-pass, thermostatic insert M 30 x 1,5 mm with pre-setting 1-7, turnable for manual handwheel to the left or right, including 2 pcs 3/4" Eurocone nuts Ø 16,8 mm in finish of valve body and dip tube, without adaptors for pipes		White Chrome	839001 839008	

→ Direction of flow












All valves etc. suitable for operating temperature max. 110 °C and operating pressure max. 10 bar, if not indicated differently.
For further information, please see information in the keyword list.

All valves respectively connection fittings are delivered with handwheels as protection caps (thermostatic heads to be ordered separately) and union nuts as transition to the tube (matching adaptors and connection sets are to be ordered separately!) → see page 23.

Zehnder Design Line Valves

Description		Version	Article nr.	Application
Valve type K Single entry/monotube valve vertical, angled, with by-pass, thermostatic insert M 30 x 1,5 mm with pre-setting 1-7, manual handwheel to the right, including 2 pcs ¾" Eurocone nuts Ø 16,8 mm in finish of valve body and dip tube, without adaptors for pipes		White Chrome Stainless steel optic	839011 839018 839010	For all radiators with ½" female thread
Valve type M Single entry/monotube valve vertical, angled, with by-pass, thermostatic insert M 30 x 1,5 mm with pre-setting 1-7, manual handwheel to the left, including 2 pcs ¾" Eurocone nuts Ø 16,8 mm in finish of valve body and dip tube, without adaptors for pipes		White Chrome	839021 839028	
Valve type N Single entry/monotube valve horizontal, straight, with by-pass, thermostatic insert M 30 x 1,5 mm with pre-setting 1-7, manual handwheel to the top, including 2 pcs ¾" Eurocone nuts Ø 16,8 mm in finish of valve body and dip tube, without adaptors for pipes		White Chrome	839031 839038	
Valve type O 50 mm straight, thermostatic insert M 30 x 1,5 mm with pre-setting 1-7 and by-pass, turnable for manual handwheel to the left or right, including 2 pcs ¾" Eurocone nuts Ø 16,8 mm in finish of valve body, without adaptors for pipes		White Chrome	839041 839048	
Valve type P 50 mm angled, with by-pass, to the right thermostatic insert M 30 x 1,5 mm, with pre-setting 1-7 and by-pass, manual handwheel, including 2 pcs ¾" Eurocone nuts Ø 16,8 mm in finish of valve body, without adaptors for pipes		White Chrome Stainless Steel optic	839051 839058 839090	
Valve type Q 50 mm angled, with by-pass, to the left thermostatic insert M 30 x 1,5 mm with pre-setting 1-7 and by-pass, manual handwheel, including 2 pcs ¾" Eurocone nuts Ø 16,8 mm in finish of valve body, without adaptors for pipes		White Chrome Stainless Steel optic	839101 839108 839140	
Valve type U 50 mm swiveling design valve straight or angled, with by-pass, thermostatic insert M 30 x 1,5 mm with pre-setting 1-7, manual handwheel to the left or to the right, including 2 pcs ¾" Eurocone nuts Ø 16,8 mm in finish of valve body, without adaptors for pipes		White Chrome	839171 839178	
Valve type W Square shaped, angled, lockshield, not thermostatic, manual handwheel, including 2 pcs ¾" Eurocone nuts Ø 16,8 mm in finish of valve body, without adaptors for pipes		Chrome	839198	

Zehnder Design Line Accessories

Description		Version	Article nr.	Application
Nut ½", 2 pcs Fe - ¾" Eurocone		White Chrome	842001 842008	As an adaptor for connection fittings with ½" external thread
Adaptors, 2 pcs Multilayer Ø 14 mm		Brass	842160	Matching to Zehnder Design Line valves and union nuts 2 x ¾" Eurocone (in scope of delivery)
Adaptors, 2 pcs Multilayer 16 x 2,0 mm		Brass	842060	
Adaptors, 2 pcs PEX 12 x 1,0 mm		Brass	842070	
Adaptors, 2 pcs Multilayer Ø 16 x 2,25 mm		Brass	842170	
Adaptors, 2 pcs Copper Ø 10 mm Copper Ø 12 mm Copper Ø 14 mm Copper Ø 15 mm Copper Ø 16 mm		Brass Brass Brass Brass Brass	842080 842090 842100 842110 842120	
Nuts Ø 18 mm - ¾" Eurocone + adaptors copper Ø 18 mm 2 pcs		Chrome / brass	842140	
Nuts Ø 20,8 mm - ¾" Eurocone + adaptors multilayer Ø 20 x 2 mm 2 pcs		Chrome / brass	842150	
Universal Adaptor set (without nuts ¾" Eurocone - Ø 16,8 mm) - 2 pcs Alu/Pex multilayer 16 x 2,0 mm - 2 pcs PEX 12 x 1 mm - 2 pcs CU 12 mm - 2 pcs CU 14 mm - 2 pcs CU 15 mm		Brass	842180	
Sleeving kit L = 70 mm L = 160 mm		Chrome Chrome	853738 853668	For connecting radiators
Collar Ø 45 mm - for Ø ½" - for Ø 10 mm - for Ø 12 mm - for Ø 14 mm - for Ø 15 mm - for Ø 16 mm - for Ø 18 mm		White Chrome White Chrome White Chrome White Chrome White Chrome White Chrome	816241 816248 816251 816258 816261 816268 816271 816278 816281 816288 816291 816298 816301 816308	For existing connections

Conversion table, f_1 factors



t_1	t_2	t_r	n	70			65			60			55			50			45		
				1,25	1,30	1,35	1,25	1,30	1,35	1,25	1,30	1,35	1,25	1,30	1,35	1,25	1,30	1,35	1,25	1,30	1,35
90	10			1,516	1,542	1,568	1,499	1,462	1,483	1,363	1,380	1,397	1,283	1,296	1,309	1,201	1,210	1,219	1,117	1,122	1,127
	15			1,380	1,398	1,416	1,311	1,319	1,333	1,228	1,238	1,248	1,149	1,155	1,162	1,067	1,070	1,073	0,982	0,981	0,981
	18			1,300	1,313	1,327	1,229	1,235	1,245	1,148	1,155	1,161	1,069	1,072	1,075	0,987	0,987	0,986	0,902	0,898	0,894
	20			1,247	1,258	1,269	1,175	1,180	1,187	1,096	1,100	1,104	1,017	1,017	1,018	0,935	0,932	0,930	0,849	0,843	0,838
	22			1,194	1,202	1,211	1,122	1,125	1,130	1,043	1,045	1,047	0,964	0,963	0,962	0,882	0,878	0,874	0,796	0,789	0,781
	24			1,142	1,148	1,154	1,069	1,071	1,073	0,992	0,991	0,991	0,913	0,909	0,906	0,830	0,824	0,811	0,743	0,734	0,726
85	10			1,454	1,476	1,498	1,387	1,398	1,416	1,305	1,319	1,333	1,228	1,238	1,248	1,149	1,155	1,162	1,067	1,070	1,073
	15			1,319	1,334	1,349	1,251	1,258	1,269	1,172	1,180	1,187	1,096	1,100	1,104	1,017	1,017	1,018	0,935	0,932	0,930
	18			1,240	1,251	1,261	1,171	1,175	1,182	1,094	1,098	1,102	1,017	1,018	1,019	0,939	0,936	0,934	0,856	0,851	0,846
	20			1,187	1,196	1,204	1,118	1,121	1,125	1,042	1,044	1,045	0,966	0,964	0,963	0,887	0,883	0,878	0,804	0,797	0,790
	22			1,135	1,141	1,147	1,065	1,067	1,069	0,991	0,990	0,990	0,915	0,911	0,908	0,836	0,830	0,824	0,753	0,744	0,736
	24			1,084	1,087	1,091	1,013	1,013	1,014	0,941	0,937	0,935	0,864	0,859	0,854	0,785	0,777	0,770	0,701	0,691	0,682
80	10			1,391	1,409	1,428	1,325	1,334	1,349	1,247	1,258	1,269	1,172	1,180	1,187	1,096	1,100	1,104	1,017	1,017	1,018
	15			1,258	1,269	1,281	1,191	1,196	1,204	1,116	1,121	1,125	1,042	1,044	1,045	0,966	0,964	0,963	0,887	0,883	0,878
	18			1,179	1,187	1,195	1,111	1,114	1,119	1,038	1,040	1,041	0,965	0,964	0,962	0,889	0,885	0,881	0,810	0,803	0,797
	20			1,127	1,133	1,138	1,059	1,061	1,063	0,987	0,987	0,986	0,914	0,911	0,908	0,839	0,833	0,827	0,759	0,751	0,743
	22			1,076	1,097	1,082	1,008	1,008	1,008	0,937	0,934	0,932	0,864	0,859	0,854	0,788	0,781	0,773	0,709	0,699	0,690
	24			1,025	1,026	1,027	0,956	0,955	0,954	0,887	0,883	0,878	0,814	0,808	0,801	0,739	0,730	0,721	0,659	0,648	0,637
75	10			1,326	1,342	1,357	1,262	1,269	1,281	1,187	1,196	1,204	1,116	1,121	1,125	1,042	1,044	1,045	0,966	0,964	0,963
	15			1,195	1,204	1,212	1,130	1,130	1,138	1,058	1,061	1,036	0,987	0,987	0,986	0,914	0,911	0,908	0,839	0,833	0,827
	18			1,118	1,122	1,127	1,051	1,053	1,055	0,982	0,981	0,981	0,912	0,908	0,905	0,839	0,833	0,827	0,763	0,755	0,747
	20			1,066	1,069	1,072	1,000	1,000	1,000	0,932	0,929	0,927	0,862	0,857	0,852	0,789	0,782	0,775	0,714	0,704	0,695
	22			1,016	1,016	1,017	0,949	0,948	0,946	0,882	0,878	0,874	0,813	0,806	0,799	0,740	0,732	0,723	0,665	0,654	0,643
	24			0,966	0,964	0,963	0,899	0,897	0,893	0,833	0,827	0,821	0,764	0,756	0,748	0,692	0,682	0,672	0,616	0,604	0,592
70	10						1,198	1,204	1,212	1,127	1,133	1,138	1,058	1,061	1,063	0,987	0,987	0,986	0,914	0,911	0,908
	15						1,068	1,069	1,072	1,000	1,000	1,000	0,932	0,929	0,927	0,862	0,857	0,852	0,789	0,782	0,775
	18						0,991	0,990	0,990	0,925	0,922	0,919	0,858	0,853	0,847	0,788	0,781	0,773	0,716	0,707	0,697
	20						0,940	0,939	0,936	0,876	0,871	0,867	0,809	0,802	0,795	0,740	0,731	0,722	0,668	0,657	0,646
	22						0,890	0,887	0,883	0,827	0,821	0,815	0,761	0,752	0,744	0,692	0,682	0,672	0,620	0,608	0,596
	24						0,840	0,837	0,831	0,779	0,771	0,763	0,713	0,703	0,694	0,644	0,633	0,622	0,572	0,560	0,547
65	10									1,066	1,069	1,072	1,000	1,000	1,000	0,932	0,929	0,927	0,862	0,857	0,852
	15									0,941	0,936	0,936	0,876	0,871	0,867	0,809	0,802	0,795	0,740	0,731	0,722
	18									0,867	0,862	0,857	0,803	0,796	0,789	0,737	0,728	0,719	0,668	0,657	0,647
	20									0,818	0,812	0,805	0,755	0,746	0,738	0,689	0,679	0,669	0,621	0,609	0,597
	22									0,770	0,762	0,755	0,707	0,698	0,688	0,642	0,631	0,620	0,574	0,561	0,549
	24									0,723	0,714	0,705	0,661	0,650	0,639	0,596	0,584	0,572	0,528	0,515	0,502
60	10												0,941	0,939	0,936	0,876	0,871	0,867	0,809	0,802	0,795
	15												0,818	0,812	0,805	0,755	0,746	0,738	0,689	0,679	0,669
	18												0,747	0,738	0,729	0,684	0,674	0,664	0,619	0,607	0,596
	20												0,700	0,690	0,680	0,638	0,626	0,615	0,573	0,560	0,548
	22												0,653	0,642	0,631	0,592	0,579	0,567	0,528	0,514	0,501
	24												0,607	0,595	0,584	0,546	0,533	0,521	0,483	0,469	0,455
55	10															0,818	0,812	0,805	0,755	0,746	0,738
	15															0,700	0,690	0,680	0,638	0,626	0,615
	18															0,630	0,619	0,607	0,569	0,556	0,544
	20															0,585	0,572	0,560	0,524	0,511	0,498
	22															0,540	0,527	0,514	0,480	0,466	0,453
	24															0,496	0,482	0,469	0,437	0,422	0,409

Conversion factors f_1 for converting the standard thermal output at 75/65/20°C to other system temperatures: $\Phi = \Phi_s \cdot f_1$

The radiator exponent depends on the model and type of radiator and can therefore be found in the table containing the technical specifications for the respective radiator. For exponents other than those given, the correction factor can be interpolated or precisely calculated according to the above formulae. An exponent of 1,3 can be used for the approximate calculation.

$$\Phi = \Phi_s \times f_1 \text{ or } \Phi = \Phi_s \times \left(\frac{\Delta t}{\Delta t_s} \right)^n$$

$$\text{with } \Delta t = \frac{(t_1 - t_r) - (t_2 - t_r)}{\ln \left(\frac{t_1 - t_r}{t_2 - t_r} \right)} = \frac{t_1 - t_2}{\ln \left(\frac{t_1 - t_r}{t_2 - t_r} \right)}$$

Example for Zehnder Virando:

What is the effective output at 60/45/24°C?

Model AB-180-060; $\Phi_s = 978 \text{ W}$, exponent $n = 1,25$
 $t_1 = 60^\circ\text{C}$, $t_2 = 45^\circ\text{C}$, $t_r = 24^\circ\text{C}$

f_1 from table: $f_1 = 0,483$
 $\Phi = \Phi_s \times f_1 = 978 \text{ W} \times 0,483 = 472 \text{ W}$

Keyword list

Accessories

A wide range of accessories are available for various additional uses, such as hanging up towels. For more information, see the section on "Accessories".

Baffle

To avoid reduced output, e.g. with a riding connection, internal installations, e.g. baffles, deflector plates, guide plates, are required. Detailed information is available on request.

Benefits

See "Product description"

CE marking

The CE marking on Zehnder radiators shows that they are manufactured in accordance with the prevailing European standard EN 442 and that the product has been subjected to the prescribed conformity evaluation procedure.



The following parameters, which allow the CE marking to be shown, can be found in the respective product section:

- Model description
- Max. operating pressure
- Nominal heat output

Product/product family	CE - Year
Zehnder Virando	CE - 16
Zehnder Impa	CE - 14
Zehnder Zeta	CE - 14

Cleaning

With a lambswool cleaning brush or soft cloth. Detailed information is available on request.

Conversion

Factor for converting the standard thermal output to thermal outputs at other system temperatures; see conversion table of f_1 factors

Corrosion protection

See "Finish" and "Surface protection"

Degree of protection

The degree of protection specifies the extent of protection that electrical equipment housing provides against dangerous parts getting into the equipment. The first number indicates the protection against the ingress of foreign objects, and the second the ingress of water.

Example: IP44

1. number = 4 = protection against solid foreign objects, 1,0 mm diameter or larger
2. number = 4 = protection against splash water

Dimensions

The dimensions indicated in the documentation are correct at the time of printing. Subject to change without notice.

Electric heating elements

Maximum temperature:

The maximum achievable temperature of the bathroom radiator depends on the following parameters: Nominal thermal output of the radiator, nominal output of the electric heating element, surrounding temperature, time switched on.

Output:

Only a limited electrical output can be installed in the bathroom radiators for safety reasons. Generally, the nominal output of the electric heating element of all Zehnder bathroom radiators should not be greater than the nominal output of the bathroom radiator (Φ_L at ΔT 50 K according to EN 442).

Mounting:

The electric heating element must be sealed with hemp or Teflon tape so that the mains cable is at the back facing the wall.

Please note:

- The electrical installation must comply with local regulations.
- In stationary installation (without plug), a switch must be installed (all-phase isolation from the mains with min. 3 mm contact spacing).
- The bathroom radiator with integrated electric heating element in central heating systems must always be completely filled with water and vented, observing the maximum permissible operating temperature of the applicable electric heating element in hot water heating systems.
- The expansion of the water in the system into the expansion vessel must be guaranteed at all times (do not block return).
- For electric-only bathroom radiators, the defined filling quantity must not be changed.
- The electric heating element must only be opened and the mains cable only replaced by the manufacturer.
- The electric heating element must only be installed vertically (housing always beneath the electric heating element).
- When using radiators with electric heating elements, the qualified electrician is the competent partner for the protective measures to be taken.
- Follow the operating instructions.

Position of electrical connection:

In bathrooms and other wet rooms, special conditions apply to the installation of switches and sockets according to DIN 57100/ VDE0100. The suggested position of the socket is chosen so as to facilitate an easy connection. This suggestion does not release the electrical engineer from executing the electrical connection in accordance with local regulations.



Minimum clearances:

The minimum wall and floor clearances must be complied with (see relevant radiator chapter).

The minimum floor clearance must meet the user requirements. The clearance must be increased accordingly in public buildings and to allow the use of cleaning machines.



Electric operation and Ecodesign Directive


In deviation from dual energy operation in a central heating system, all electric radiators are fixed units that comprise the actual radiator body, a filling medium (heat transfer fluid), a heating element and associated controls. This unit is subject to a special function test and must not be changed. The heat transfer fluid is frost-proof up to -20°C as long as there are no other restrictions associated with the standard scope of delivery for the radiator in question. The product portfolio also includes dry electric radiators. A large number of radiator models with different control and regulation options are available for a wide range of applications.

Electric radiators are subject to the Ecodesign Directive. The aim of this Directive is to reduce the environmental effects of products that consume energy, with the entire product life-cycle taken into account. A points system is used to evaluate the extent to which the Directive has been fulfilled. Various functions, such as standby power consumption $\leq 0,5$ W, weekly programme and open window detection, help to fulfil the minimum legal requirements (that is, they help to achieve the minimum number of points). Devices that meet the minimum requirements and are thus compliant with the Ecodesign Directive are marked with this symbol in the price list: . Towel warmers are not subject to the Ecodesign Directive. They are not intended for room heating and are marked with this symbol: .

Keyword list

The following table provides an overview of the available products combined with different control and regulation devices:

Product/ product family	Control device	Control device in combination with app	Operation on electric heating element
Zehnder Virando			

-  Electric radiator (standard)
-  Electric radiator (available as an option)
-  Towel warmer (standard)
-  Towel warmer (available as an option)

Environment

The certification of our environmental management system to DIN EN ISO 14001 by an independent institution obliges us to make continuous improvements to our environmental services through reducing or avoiding environmental burdens and waste, encouraging the utilisation and protection of resources as well as observing all environmental laws and regulations applicable to us.

Finish

Ready-painted radiators in this price list have a two-coat finish (to DIN 55900, Part 1 and 2, comprising primer and top coat). The top coat is a powder coating. The high-quality Zehnder powder coating produces an especially smooth and extremely durable surface. Further information on the applications and limits of radiators is contained in information sheet number 7 of the BDH (Bundesverband der Deutschen Heizungsindustrie e.V.). Please **always** use the original RAL, NCS colour samples or original colour charts of the sanitary manufacturers for exact colour matching.

For technical production reasons, minor colour deviations are possible in paints on steel surfaces, also when taking the prevailing lighting conditions into account. Deviations can also occur when comparing painted steel surfaces (radiators) with ceramic products. The colours shown here (see inside of back cover) are not binding for printing reasons. Radiators in metallic colours, e.g. RAL 9006, RAL 9007 and Anthracite are unique products and visual differences may appear in the colour, depending on the radiator.

Fixings

To ensure that radiators are fitted safely, the weight of the radiator and other aspects must be considered when choosing the right quality and quantity of brackets. Additional loads and foreseeable misuse of a radiator must be considered or ruled out by planning and implementation in line with the known building use. The installation situation and accessibility are just as important criteria as brickwork, bracket shape, location of the suspensions, locking device, add-on elements and the like. See also VDI 6036.

Flow connection

This concerns the connection on the radiator through which the hot water flows into the radiator.

Galvanisation

See "Surface protection"

Galvanisation

Galvanisation creates structures on the surface.

These are caused by the technological process and therefore are not a fault. We cannot guarantee a clean, smooth surface. Galvanised radiators are generally delivered with a top coat. For explanation, see "Surface protection".

Product/product family	Special version, galvanised
Zehnder Virando	-
Zehnder Impa	-
Zehnder Zeta	-

Hydraulic balancing

By hydraulic balancing the various system resistances are set so that the radiators are supplied with the necessary quantity of water at all operational points, in order to achieve the desired thermal output.

Inlet and outlet resistance

The coefficient of resistance (zeta value) is used to calculate the pressure loss. For more information, see "Pressure loss".

Minimum water flow

If the flow of water through a radiator is heavily reduced, the heat output can fall far below the calculated or indicated value. For this reason, a minimum water flow should always be ensured. The following table shows the approximate minimum water flows $q_{m, \min}$ in % of the nominal flow rate $q_{m, \text{ms}}$ which does not cause the heat output to deviate from the standard characteristic curve by more than 5%.

Product/product family	$q_{m, \min}$ in % of $q_{m, \text{ms}}$
Zehnder Virando, Zehnder Impa, Zehnder Zeta	27%

Nominal heat output

The nominal heat output of a radiator is determined in an independent, certified test laboratory according to standard EN 442 at the standard operating temperatures of 75/65/20°C. The conversion of the thermal output to other system temperatures is done on the basis of the nominal heat output according to EN 12831. For easy dimensioning, additional outputs for frequently used temperatures are shown alongside the nominal heat output:

- 70/55/24 °C
- 55/45/24 °C
- 55/45/20 °C

The conversion of the nominal heat output to deviating system temperatures can be done using the f_1 -factors on the conversion factors page.

Operating pressure

The maximum permissible operating pressure of a radiator depends on its geometry, the material used and the finish. Max. permissible operating pressure according to product:

Product/product family	Standard version [bar]	High-pressure version [bar]
Zehnder Virando	10	-
Zehnder Impa	13	-
Zehnder Zeta	10	-

Suitable fittings, plugs and air vents, etc. must be ensured in connection with high pressure applications in excess of 10 bar. Pressure loads up to max. 18 bar are only adaptable for suitable radiators and components as long as pressure shocks can be ruled out.

Keyword list

Operating temperature

Zehnder radiators can generally be used for hot water heating systems up to 110°C. Exceptions are noted on the product in question. They are suitable for use in district heating, low temperature and condensing systems.

Packaging

The packaging of Zehnder radiators serves as protection against damage during transport and on building sites. It must be removed before starting the system for the first time in order to avoid any damage caused by condensation.

Pressure loss

Inlet and outlet resistance per radiator for water flow rates of up to 1 m/s $\zeta = 3,0$.

The pressure losses of the presettable standard valve sets to be taken into consideration when designing the pump and basic network layout can be taken from the diagrams on the valve characteristics page.

Prices

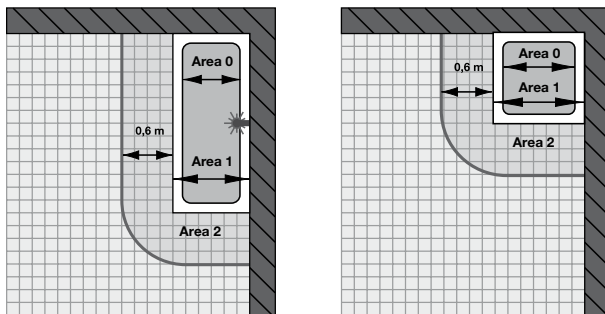
See General Sales and Delivery Conditions. You can find these under "Legal notice" on our homepage at www.international.zehnder-systems.com.

Product description

At the beginning of each chapter is a description of the radiator together with its product-specific benefits and applications.

Protected areas

The provisions of VDE 0100 must be observed when installing radiators with electric heating elements in wet rooms. Examples of the protected area classification for electrical equipment according to VDE 0100 PART 701 for baths and showers.



Areas 0 and 1:

Comprise the inside and surrounding areas of bath tubs and shower trays, area 1 ends at the outer edge of the tub/tray. No radiators with electric heating elements must be installed or connected in these areas.

Area 2:

Radiators with electric heating elements can be installed and connected here. The electric heating elements and the connection must have at least degree of protection IPX4 (WIVAR II, WIVAR Hotel, RICA, DBM, RACY).

If the connection is made via a plug and socket, the socket must be outside of areas 0, 1 and 2.

Quality check

Zehnder Group Deutschland GmbH is certified to DIN ISO 9001 and is therefore subject to stringent quality controls carried out by independent institutions in the areas of Design/Development, Production, Assembly and Customer Service.

Room divider

An overview of how the designer bathroom radiator can be used as a room divider is provided by the following table. Detailed information can be found in the respective product chapters.

Product/product family	Room divider
Zehnder Virando	-
Zehnder Impa	-
Zehnder Zeta	-

Reduced output

The thermal output can be affected depending on where the radiator is installed. The nominal heat output is measured in an unobstructed setting with a ground clearance of 110 mm and a wall clearance of 50 mm. Any reduction in these clearances, as well as installation in alcoves and the application of covers and grilles can, depending on the model, lead to a reduction in thermal output.

Standard water flow q_{ms}

(heating agent flow, flow quantity, mass flow)

The nominal flow rate q_{ms} of a radiator gives a temperature spread of 10 K at a flow temperature of 75°C (standard thermal output conditions).

$$q_{ms} = \frac{\Phi}{c_p (t_r - t_e)} \quad c_p \approx 4187 \frac{\text{J}}{\text{kg} \cdot \text{K}}$$

The actual water flow q_m of a radiator can, at flow and return temperatures other than 75/65°C, deviate significantly from the nominal flow rate q_{ms} .

Example

Zehnder Universal

$\Phi_s = 1093 \text{ W}$ (at 55/45/24: 483 W)

Model HU-180-60

Temperatures: 55/40/24 °C

$$q_{ms} = \frac{483}{4187 (55-40)} \quad q_{ms} = 0.015 \text{ kg/s} \approx 41.5 \text{ kg/h}$$

The actual mass flow q_m is therefore still:

$$q_m \text{ in } \% = \frac{q_m}{q_{ms}}$$

$$q_m \text{ in } \% = \frac{41,5}{116,5}$$

$$q_m \text{ in } \% = 36\% \text{ from } q_{ms} > 27\%$$

minimum according to table: 27%.

The example therefore satisfies the guideline for the minimum water flow; see also minimum water flow.

Registration

Zehnder radiators are tested to EN 442 and comply with this standard.

Returns

Radiators and accessories cannot be returned.

Return connection

This concerns the connection on the radiator through which the hot water leaves the radiator and passes along the return line to the heat generator.

Scope of delivery

The scope of delivery for the standard version of a radiator can be found in the respective product description.

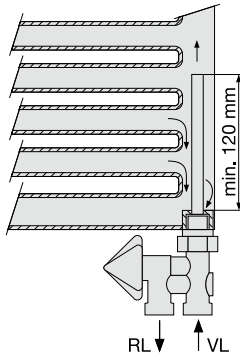
Seals

In the case of sealed connections and plugs, it may be necessary to tighten up the connection and blanking plugs depending on the water quality, e.g. in a connection to district heating, after testing the pressure or heating the system for the first time. The sealing materials supplied or used by Zehnder are intended for use in closed heating systems.

Keyword list

Single-pipe systems

Only possible with valves for vertical installation. We recommend using single-tube valves with an adjustable by-pass or a riser, i.e. with an adjustable water volume above the radiator. Only single-tube valves with baffle plates of at least 120 mm in length may be used. TKM and Oederlin systems with screw-in turbulators and 150 mm baffle plate. Essentially, a reduced output of at least 25% must be considered when using single-tube baffle plates. Function is often guaranteed only for certain models and up to specific lengths. Maximum lengths and an indication of how the radiators function with various makes of valve is available on request.



Special finish

Zehnder radiators are available in almost every colour conceivable. The Zehnder colour chart shows a selection of the possible colours from various colour systems, such as RAL colours, sanitary colours or the NCS-S system. The standard finish for the entire Zehnder radiator programme is the colour RAL 9016, Traffic White. A further 17 popular colours form Zehnder colour category 1 (see the respective product tables for prices); another 30 form Zehnder colour category 2, with a surcharge on colour category 1. All other paintable colours are available for a surcharge on request. Another coating option is the clear lacquer version for Zehnder Metropolitan (Technoline), which falls in category 2. This essentially concerns one unique colour for each radiator. For this reason, different surface structures and visual colour differences can also occur at a later point in time. These colour deviations are not a fault and are therefore not subject to claims under warranty as described in our General Sales and Delivery Conditions. Special prices apply for highly-polished metal surfaces and metal look. Refer also to the paint and colour chart on the back cover.

Standard data set

The standard data set contains all technical information required by layout programmes. Free data sets can be requested direct from Zehnder or downloaded from the internet (www.international.zehnder-systems.com).

Standard colour and coating

The standard colour for Zehnder radiators is RAL 9016. For more information, see "Finish".

Storage

Zehnder radiators must be stored for the long term or temporarily in dry and chemical-free rooms.

Surface protection

We recommend that installation areas affected by damp or chemicals are only fitted with radiators that are galvanised and then given a powder coating. For possible applications, see „Galvanisation“.

System temperatures

These are the temperatures at which the hot water heating system is operated (flow, return and room temperature).

Test pressure

Each radiator is checked for leaks by subjecting it to 1,3 times its rated maximum operating pressure before delivery. For orders that do not indicate the actual operating pressure, the radiator will be delivered with the operating pressure of the standard version.

Technical specifications

The technical specifications indicated in the documentation are correct at the time of printing. We reserve the right to make amendments that improve the product.

Technoline

See "Special finish"

Tolerances

Industry-standard tolerances and tolerances based on production technology are subject to change for all indicated dimensions and fall within the tolerances defined in EN 442. The maximum tolerance must be considered during pre-assembly of the pipework or fixing materials. We reserve the right to make technical amendments during the validity of the documentation as part of product improvement.

Tender specification

The description of a product is shown in the respective chapter in the product description section.

Thermal output Φ

The thermal output of a radiator model is given by the standard characteristic curve:

$$\Phi = K_m \cdot \Delta T_n$$



EN 442 defines the pan-European test procedure and the measurement method in identically arranged test laboratories.

According to the EN 442 standard, the higher temperature is calculated from the logarithmic mean between flow and return temperature as well as the intake air temperature.

Excess temperature ΔT :

$$\Delta T = \frac{t_1 - t_2}{\ln \left(\frac{t_1 - t_r}{t_2 - t_r} \right)}$$

The thermal output for excess temperatures ΔT other than the standard excess temperature $\Delta T = 50 \text{ K}$ can be calculated via the

$$\Phi = \Phi_s \times \left(\frac{\Delta T}{50 \text{ K}} \right)^n$$

equation.

Example for calculating the thermal output Φ :

$$\begin{aligned} \Phi_s &= 1024 \text{ W} \\ n &= 1,30 = \text{exponent} \\ t_1 &= 60^\circ\text{C} \\ t_2 &= 40^\circ\text{C} \\ t_r &= 24^\circ\text{C} \end{aligned}$$

$$\Delta T = \frac{60 - 40}{\ln \left(\frac{60 - 24}{40 - 24} \right)} = 24,7 \text{ K}$$

$$\Phi = 1024 \text{ W} \times \left(\frac{24,7 \text{ K}}{50 \text{ K}} \right)^{1,30} = 1024 \text{ W} \times 0,40 = 409 \text{ W}$$

also see "Nominal heat output"

Keyword list

VDI 6036

Application of the directive VDI 6036 assists all participants in the process to make a comprehensive and comparable assessment of the installation situation. As an accepted rule of technology, this directive and the resulting assessment can also be drawn on for regulation purposes in the event of damages. Directive VDI 6036 classifies applications for radiator fastenings into various requirements classes with different loads. Additional loads for various intensities of misuse can be added to the net weight and water content of the radiator as required. Zehnder publishes a recommendation for the allocation of selected fixing elements – provided not labelled otherwise – by standard for the requirements classes 2 and stable wall structures (e.g. concrete). Assignment recommendations for requirements class 3 and for special custom applications (requirements class 4) on request.

Example applications from VDI 6036:

Requirements class 2 (normal and increased requirements): owner-occupied homes, rented flats, kindergartens, hospitals, retirement and nursing homes, office buildings, doctors' surgeries/lawyers offices, retail outlets.

Requirements class 3 (high-level requirements): schools, sports facilities, youth centres, meeting places, railway stations, barracks

Requirements class 4 (very high-level requirements or special burdens): prisons, psychiatric institutions, special agreements

Wall clearance

This is the distance between the wall and the back of the radiator. For more information, see "Reduced output".

Warranty

In deviation from the regulations contained in section 8.2 of our General Sales and Delivery Conditions (www.international.zehnder-systems.com), the warranty period for the products shown in the Price List for 2019 is 5 years, and for electrical components just 2 years.

Water quality

Operating conditions and water quality according to VDI 2035 must be maintained.

Claims under guarantee will be rejected if substances (e.g. chemicals, antifreeze, etc.) which have an aggressive effect on the sealing material are added to the heating water.

In case of non-compliance, no liability can be accepted in accordance with point 8 of our General Sales and Delivery Conditions for sealing material, nor for any resulting defects and consequences.

Claims under guarantee in accordance with point 8 of our General Sales and Delivery Conditions will also be rendered invalid in case of:

- Operation with steam,
- Periodical or long-term emptying of the system,
- Excessive sludge in the radiators and
- Occasional or constant see page of oxygen into the system.

Wet rooms

See "Surface protection"

WEEE Statement

This product may not be treated as household waste. Instead it should be handed to an appropriate collection point for the recycling of electrical and electronic equipment. For more detailed information about the recycling of this product, please contact your local council office or your household waste disposal service.



Legend

Icon	Unit	Description
H	mm	Height
L	mm	Length
T	mm	Depth
H Lam.	mm	Height of fins
N	mm	Connection centre
A	m ²	Surface
V	dm ³	Water content
M	kg	Empty weight
t ₁	°C	Flow temperature
t ₂	°C	Return temperature
t _r	°C	Indoor air temperature
t _m	°C	Average water temperature (t ₁ +t ₂)/2
ΔT _n	K	Standard excess temperature t _m - t _r
ΔT	K	Excess temperature t _m - t _r
Φ	W=(J/s)	Thermal output
Φ _s	W	Nominal heat output
Φ _L	W	Nominal heat output of module
c _p	J/(kg K)	Mean specific heat capacity
n	-	Radiator indicator, exponent
s _k	%	Proportion of radiation
c _k	-	Conversion factor to Φ _s
q _m	kg/h/(kg/s)	Water flow
q _{ms}	kg/h/(kg/s)	Nominal flow rate
v	m/s	Velocity
Δp	kPa	Pressure loss, pressure drop
ζ	-	Coefficient of resistance
ln	-	Natural logarithm

Physical unit

°C	Degrees, Celsius
K	Kelvin, unit for temperature difference
m	Metres
mm	Millimetres
m/s	Metres/second, flow rate
Pa	Pascal, 1 Pa = 0,102 mmWS
mmWS	mm water column
W	Watt, unit of power 1 W = 0,6 kilocalories/hour, 1 W = 1 J/s old unit of power, 1 kcal/h = 1,163 W
c	Specific heat capacity of water = 1 kcal/(kg K) = 4,187 kJ/kg K
kJ	Kilojoule, 1 kJ = 0,239 kcal



Colour system – design radiators for bathrooms



Standard

	Traffic White 9016* / RAL 9016 EDI-Code: B1
---	--

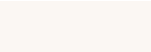
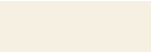
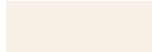
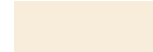






Colour category 1

For prices see the respective price tables on the product pages

Architectural

	Pure White 9010* / RAL 9010 EDI-Code: B4		Anthracite Grey 7016* / RAL 7016 EDI-Code: AW		Traffic Black (matt) 9217 EDI-Code: B5		Jet Black 9005* / RAL 9005 EDI-Code: B3
---	---	---	--	---	---	---	--

Natural

	Edelweiss 0067 EDI-Code: 67		Cream 9001* / RAL 9001 EDI-Code: AZ		Pergamon 0081* EDI-Code: AI		Jasmin 0072 EDI-Code: 72
	Oyster White 1013* / RAL 1013 EDI-Code: AJ		Grey White 9002* / RAL 9002 EDI-Code: B2		Manhattan 0077* EDI-Code: A8		Natura 0035* EDI-Code: 35
	Bahama 0054* EDI-Code: 54		Chocolate Brown 8017* / RAL 8017 EDI-Code: AY				

Tonic











	Traffic Yellow 1023* / RAL 1023 EDI-Code: AL		Flame Red 3000* / RAL 3000 EDI-Code: AN		Ruby Red 3003* / RAL 3003 EDI-Code: AO
---	---	---	--	---	---

Colour category 2


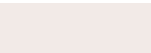







For prices see the respective price tables on the product pages

All other special colours in the RAL, RAL-D, NCS-S, Sanitary, DB colour systems are also available as required, surcharge on request.













Architectural

	White Matt 0556 EDI-Code: DF		White Quartz 0521 EDI-Code: DC		White Aluminium 9006* EDI-Code: A7		Titane 0335* EDI-Code: A5
	Grey Aluminium 9007* EDI-Code: A3		Anthracite 0346 EDI-Code: A1		Volcanic 0336 EDI-Code: A6		Black Matt 0557 EDI-Code: DG
	Black Quartz 0550 EDI-Code: DD						Traffic Black Matt (glossy finish) RAL 9017 EDI-Code: DG

Natural

	Chinchilla 0064 EDI-Code: 64		Petal 0510* EDI-Code: D2		Sand Quartz 0522 EDI-Code: BA		Beige Quartz 0523 EDI-Code: BB
	Caramel Quartz 0511 EDI-Code: D3		Terracotta Quartz 0512 EDI-Code: D4		Gold Look 0514* EDI-Code: D5		Brown Quartz 0529 EDI-Code: BH
	Dark Brown 0847 EDI-Code: BK						

Tonic

	Lemon 0515* EDI-Code: D6		Orange Quartz 0528 EDI-Code: BG		Lichen 8723 / NCS-S-2010-G60Y EDI-Code: BQ		Spring Green 0846 EDI-Code: BI
	Mauve 0517* EDI-Code: D8		Violet 0518* EDI-Code: D9		Strawberry 3770 / NCS-S-2065-R20B EDI-Code: BN		Dark Purple 0848 EDI-Code: BL
	Amethyst Quartz 0516 EDI-Code: D7		Pacific Blue 0519 EDI-Code: DA		Horizon Blue 0520* EDI-Code: DB		Prussian Blue 0555* EDI-Code: DE

Highly-polished metal surfaces

For prices, refer to the respective product

	Chrome 0008 EDI-Code: CR
---	---------------------------------------

Explanation

	Colour name Zehnder no./Colour standard Zehnder EDI code
---	---

* These colours have a glossy finish, all others are matt.

Some colours/surfaces are only available for selected products. Please also see the notes on the respective product pages. Special colours on request. Due to different manufacturing techniques of the original colours, deviations can occur in colour and polish. RAL and NCS are designations from the manufacturer.

