



CWW / CFW
Circular duct heaters for hot water

CWW

Circular duct heaters for hot water

CWW duct heaters with circular duct connection use hot water as energy medium and are used to heat the ventilation air in a ventilation system. CWW duct heaters can also be used for individual heating of specific rooms or areas. To regulate the room or inlet air temperature, the duct heaters are complemented with regulators, sensors, actuators, valves and a frost-protection control.

- 15 standard sizes in stock
- Opening access panel for inspection and cleaning
- Coil, 2 or 3 rows of pipes
- Air tightness class D as per EN 15727

Design

Casing made of Zinc Magnesium-coated sheet steel, ZM 310. Coil with copper pipes and pipe connections as well as aluminium fins. Opening access panel for easy inspection and cleaning. Duct connections are fitted with rubber gaskets.

Operating Data

Max. operating temperature: +150 °C
 Max. operating pressure: 1.0 MPa (10 bar)
 The coils have been pressurised and leak tested.

Dimensioning

Dimensioning can easily be achieved with our web-based calculation program VEAB Select (www.veab.com).
 If necessary, contact our sales staff for help.

Installation

CWW duct heaters can be installed in a horizontal or a vertical duct with the air flow in any direction.

Control Unit

See pages 6 to 8 for a list of regulators, sensors, valves and actuators.

Hygiene

The design with an opening access panel allows for inspection and cleaning of coil and air channels. This contributes to cleaner air channels and thus fresh and healthy ventilation air.



Air Tightness Class D

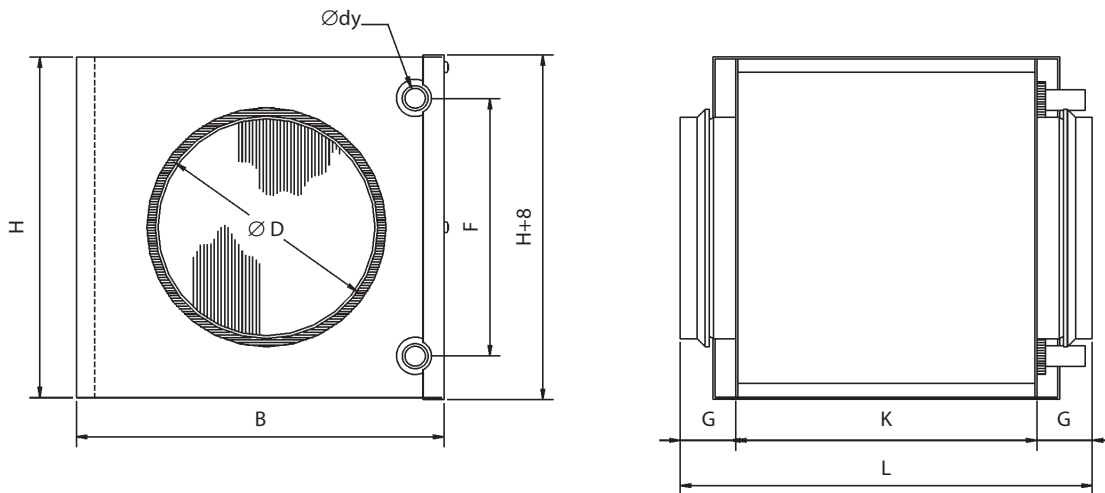
CWW duct heaters meet air tightness class D as per EN 15727, which ensures that the heated air reaches its destination and does not leak out of the ventilation system that saves both energy and money.

Tightness class D is the highest classification according to EN 15727.



Product Range Overview with Dimensional Drawing

Type	∅ D mm	B mm	H mm	∅ dy mm	F mm	G mm	K mm	L mm	Inner pipe volume l	Weight kg
CWW 100-2-2.5	100	251	180	10	137	30	280	340	0.1	3.6
CWW 100-3-2.5	100	251	180	10	100	30	280	340	0.15	3.6
CWW 125-2-2.5	125	251	180	10	137	35	280	350	0.1	3.6
CWW 125-3-2.5	125	326	255	10	175	35	280	350	0.4	5.2
CWW 160-2-2.5	160	326	255	10	212	40	280	360	0.25	5.4
CWW 160-3-2.5	160	326	255	10	175	40	280	360	0.4	5.4
CWW 200-2-2.5	200	326	255	10	212	40	280	360	0.25	5.3
CWW 200-3-2.5	200	411	330	22	250	40	280	360	0.7	8.2
CWW 250-2-2.5	250	411	330	22	250	40	280	360	0.45	7.7
CWW 250-3-2.5	250	486	405	22	325	40	280	360	1.1	10.2
CWW 315-2-2.5	315	486	405	22	325	40	280	360	0.7	9.9
CWW 315-3-2.5	315	560	504	22	400	40	280	360	1.61	13.4
CWW 400-2-2.5	400	560	504	22	400	55	280	390	1.0	13.1
CWW 400-3-2.5	400	710	529	22	425	55	332	442	2.5	17.9
CWW 500-2-2.5	500	707	529	22	425	55	332	442	1.6	16.9



Project Design/Orders

Description – CWW

Duct heater, VEAB type CWW, with casing made of Zinc Magnesium-coated sheet steel, ZM 310, coil with copper pipes and pipe connections as well as aluminium fins. The duct heater meets air tightness class D. Feedback control is achieved by means of an external regulator, sensors, valves and actuators to be ordered separately.

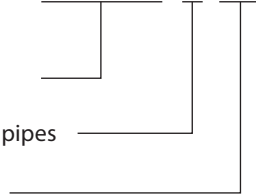
Type designation CWW 100 - 2 - 2.5

(example)

Size designation

Number of rows of pipes

Fin spacing mm



Specify the following when configuring/ ordering

1. Air flow: - m³/h
2. Inlet air temperature: - °C
3. Outlet air temp. or desired output: - °C or kW
4. Duct dimensions: - mm
5. Inlet water temperature: - °C
6. Outlet water temp. or water flow: - °C or l/s
7. Antifreeze agent: - type / %

CFW

Circular duct heaters for hot water, Insulated

CFW duct heaters with circular duct connection use hot water as energy medium and are used to heat the ventilation air in a ventilation system. CFW duct heaters can also be used for individual heating of specific rooms or areas. To regulate the room or inlet air temperature, the duct heaters are complemented with regulators, sensors, actuators, valves and a frost-protection control.

CFW is supplied with a double-jacket casing and insulated with 50 mm rock wool. The insulation minimises energy dissipation.

CFW has an insulated opening access panel making it easy to clean the coil and air channels. Regular cleaning ensures efficiency, and is important for hygiene.

- 13 standard sizes in stock
- Double-jacket casing made of Zinc Magnesium-coated sheet steel, ZM 310
- Insulated with 50 mm rock wool
- Opening access panel for inspection and cleaning
- Coil, 2 or 3 rows of pipes
- Air tightness class D as per EN 15727

Design

Double-jacket casing made of Zinc Magnesium-coated sheet steel, ZM 310 with 50 mm rock wool insulation. Coil with copper pipes and pipe connections as well as aluminium fins.

Duct connections are fitted with rubber gaskets.

Operating Data

Max. operating temperature: +150 °C
 Max. operating pressure: 1.0 MPa (10 bar)
 The coils have been pressurised and leak tested.

Dimensioning

Dimensioning can easily be achieved with our web-based calculation program VEAB Select (www.veab.com). If necessary, contact our sales staff for help.

Installation

CFW duct heaters can be installed in a horizontal or a vertical duct with the air flow in any direction.

Control Unit

See pages 6 to 8 for a list of regulators, sensors, valves and actuators.

Hygiene

The design with an opening access panel allows for inspection and cleaning of coil and air channels. This contributes to cleaner air channels and thus fresh and healthy ventilation air.



Air Tightness Class D

CFW duct heaters meet air tightness class D as per EN 15727, which ensures that the heated air reaches its destination and does not leak out of the ventilation system—that saves both energy and money.

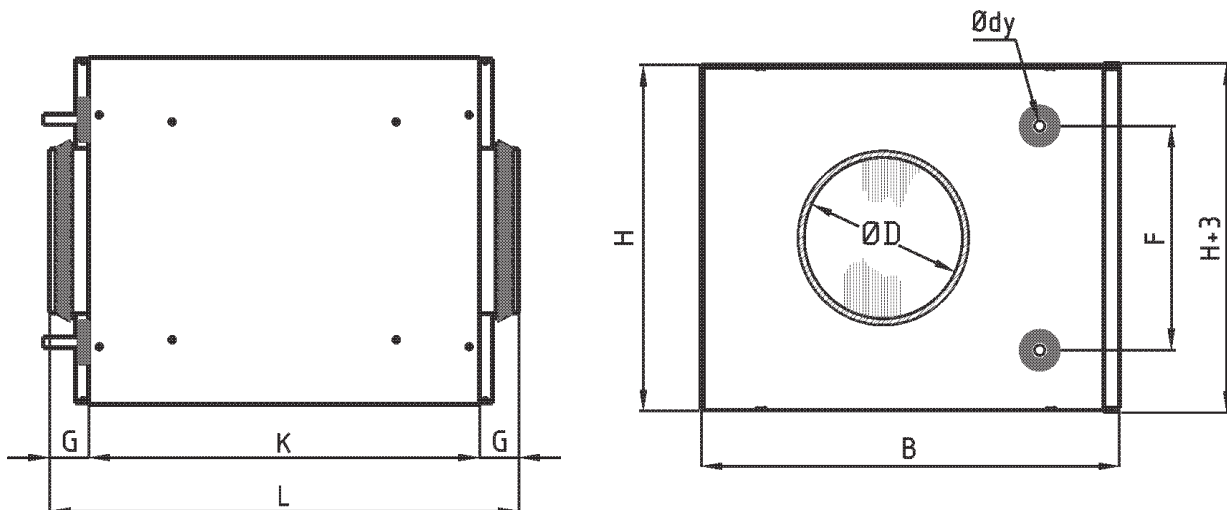
Tightness class D is the highest classification according to EN 15727.



Product Range Overview with Dimensional Drawing

Type	∅ D mm	B mm	H mm	∅ dy mm	F mm	G mm	K mm	L mm	Inner pipe volume l	Weight kg
CFW 125-2-2.5	125	329	253	10	137	35	366	436	0.1	9.5
CFW 125-3-2.5	125	404	328	10	175	35	366	436	0.4	13.8
CFW 160-2-2.5	160	404	328	10	212	40	368	448	0.25	14.4
CFW 160-3-2.5	160	404	328	10	175	40	368	448	0.4	14.4
CFW 200-2-2.5	200	404	328	10	212	40	368	448	0.25	14
CFW 200-3-2.5	200	489	403	22	250	40	368	448	0.7	21.8
CFW 250-2-2.5	250	489	403	22	250	40	380	460	0.45	20.5
CFW 250-3-2.5	250	564	478	22	325	40	380	460	1.1	26.5
CFW 315-2-2.5	315	564	478	22	325	40	382	462	0.7	25.7
CFW 315-3-2.5	315	639	553	22	400	40	382	462	1.6	28.8
CFW 400-2-2.5	400	639	553	22	400	55	380	490	1.0	28.1
CFW 400-3-2.5	400	789	581	22	425	55	380	490	2.5	38
CFW 500-2-2.5	500	789	651	22	425	55	378	488	1.6	42

CWW / CFW



Project Design/Orders

Description – CFW

Duct heater, VEAB type CFW, with 50 mm rock wool insulated double-jacket casing made of Zinc Magnesium-coated sheet steel, ZM 310, coil with copper pipes and pipe connections as well as aluminium fins. The duct heater meets air tightness class D. Feedback control is achieved by means of an external

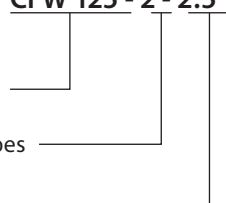
Type designation CFW 125 - 2 - 2.5

(example)

Size designation

Number of rows of pipes

Fin spacing mm



Specify the following when configuring/ordering

1. Air flow: - m³/h
2. Inlet air temperature: - °C
3. Outlet air temp. or desired output: - °C or kW
4. Duct dimensions: - mm
5. Inlet water temperature: - °C
6. Outlet water temp. or water flow: - °C or l/s
7. Antifreeze agent: - type / %

Regulators



AQUA24TF



RC



RC-DO



OPTIGO OP10

AQUA

Complete regulator with integrated room sensor. Floating feedback control for control of three-position actuators. Cascade connection with minimum limitation of inlet air in case of room feedback control. Can be fitted with external room and/or duct sensor as well as external setpoint adjuster. Temperature range 0-30 °C, depending on choice of sensor.

AQUA24TF

24 V supply. The regulator includes an integrated regulating antifreeze device with two alarm relays and automation for standstill heater.

REGIO MINI

Complete regulator with integrated room sensor. Can be fitted with external room and/or duct sensor. Includes two control outputs for sequential heating and cooling, for example.

RC

24 V supply. 0...10 V outgoing control signal. Base setpoint 20-26 °C is adjusted with DIP switches. The base setpoint can be adjusted by ± 3 °C using the setpoint knob.

RC-DO

24 V supply. 0...10 V outgoing control signal. RC-DO includes a backlighted display and temperature range from 0-50 °C.

OPTIGO

Regulator with display. One knob for all adjustments. To be mounted on DIN rail. Operates with PT1000 sensor Within the -20 °C to +40 °C range. Started/stopped with "run" signal from fan.

OP5

24 V supply. 0...10 V outgoing control signal. Operates with a room or duct sensor. Convertible for heating or cooling feedback control.







OP10

24 V supply. Adjustable for 0...10 V outgoing control signal or 3-point feedback control. Two control outputs for sequential heating and cooling, for example. Input for two sensors and possible antifreeze sensor. Inlet air feedback control or room feedback control with cascade controlled inlet air. Antifreeze control with standstill heater. Output for starting/stopping fans, for example, via relay 230 VAC 1-ph., 5 A. Programmable weekly timer for control of both fans and heating/cooling. Outputs for external timer that extends operating time. Can be equipped with an external setpoint adjuster.






OP10-230

Same functions as OP10 but with 230 VAC 1-ph supply.

AQUA Accessories

	Product	Range	Design
	Duct sensor TG-K330	0-30 °C	IP20 degree of protection
	Room sensor TG-R430 With setpoint adjuster	0-30 °C	IP30 degree of protection
	Room Sensors TG-R530	0-30 °C	IP30 degree of protection
	Room sensor TG-R630	0-30 °C	IP54 degree of protection
	Strap-on temperature sensor TG-A130 Supplied with clamp	0-30 °C	IP65 degree of protection
	Transformer 60 Enclosed transformer for wall mounting. Integrated two-pole protection on secondary side.		Input voltage 230 VAC 1-ph. Output voltage 24 VAC 1-ph. Maximum load 60 VA IP44 degree of protection

OPTIGO and REGIO Accessories

	Product	Range	Design
	Duct sensor TG-K3/PT1000	-30...+70 °C	IP20 degree of protection
	Room sensor TG-R5/PT1000	0-50 °C	IP30 degree of protection
	Room sensor TG-UH/PT1000	-30...+120 °C	IP65 degree of protection
	Strap-on temperature sensor TG-A1/PT1000 Supplied with clamp	-30...+150 °C	IP65 degree of protection
	Transformer 60 Enclosed transformer for wall mounting. Integrated two-pole protection on secondary side.		Input voltage 230 VAC 1-ph. Output voltage 24 VAC 1-ph. Maximum load 60 VA IP44 degree of protection

Actuators and Valves with Kvs 0.25 – 8.0 (110 °C max.)

Designation		Type
3-way actuator for ZTV/ZTR valves, IP44 degree of protection		RVAZ4-24
0...10 V actuators for ZTV/ZTR valves, IP44 degree of protection		RVAZ4-24A
Designation	Kvs	Type
2-way valve ½"	0.25	ZTV15-0,25
2-way valve ½"	0.4	ZTV15-0,4
2-way valve ½"	0.6	ZTV15-0,6
2-way valve ½"	1.0	ZTV15-1,0
2-way valve ½"	1.6	ZTV15-1,6
2-way valve ¾"	2.0	ZTV20-2,0
2-way valve ¾"	2.5	ZTV20-2,5
2-way valve ¾"	4.0	ZTV20-4,0
2-way valve ¾"	6.0	ZTV20-6,0
2-way valve 1"	8.0	ZTVB25-8
3-way valve ½"	0.25	ZTR15-0,25
3-way valve ½"	0.4	ZTR15-0,4
3-way valve ½"	0.6	ZTR15-0,6
3-way valve ½"	1.0	ZTR15-1,0
3-way valve ½"	1.6	ZTR15-1,6
3-way valve ¾"	2.0	ZTR20-2,0
3-way valve ¾"	2.5	ZTR20-2,5
3-way valve ¾"	4.0	ZTR20-4,0
3-way valve ¾"	6.0	ZTR20-6,0
3-way valve 1"	8.0	ZTRB25-8



RVAZ4-24 actuator



ZTV valve



ZTR valve



RVAN5-24 actuator



MTVS valve



MTRS valve

Actuators and Valves with Kvs 1.0 – 16.0 (185°C max.)

Designation		Type
3-way actuator for MTRS/MTRV valves, IP54 degree of protection		RVAN5-24
0...10 V actuators for MTRS/MTRV valves, IP54 degree of protection		RVAN5-24A
Designation	Kvs	Type
2-way valve ½"	1.0	MTRV15-1,0
2-way valve ½"	1.6	MTRV15-1,6
2-way valve ½"	2.1	MTRV15-2,1
2-way valve ½"	2.7	MTRV15-2,7
2-way valve ¾"	4.2	MTRV20-4,2
2-way valve ¾"	5.6	MTRV20-5,6
2-way valve 1"	10.0	MTRV25-10
2-way valve 1 ¼"	16.0	MTRV32-16
3-way valve ½"	0.63	MTR15-0,63
3-way valve ½"	1.0	MTR15-1,0
3-way valve ½"	1.6	MTR15-1,6
3-way valve ½"	2.1	MTR15-2,1
3-way valve ½"	2.7	MTR15-2,7
3-way valve ¾"	4.2	MTR20-4,2
3-way valve ¾"	5.6	MTR20-5,6
3-way valve 1"	10.0	MTR25-10
3-way valve 1 ¼"	16.0	MTR32-16

Valve and Actuator Selection Guide for CWW / CFW

Water temp. 110 °C max.

Actuators RVAZ4-24 (3-position) or RVAZ4-24A (0...10 V) can be used for all ZTV/ZTR valves.

Type of CWW / CFW	Valve type	Kvs
CWW 100-2-2.5	2-way ZTV15-0.4 3-way ZTR15-0.4	0.4
CWW 100-3-2.5	2-way ZTV15-0.4 3-way ZTR15-0.4	0.4
CWW 125-2-2.5 CFW 125-2-2.5	2-way ZTV15-0.6 3-way ZTR15-0.6	0.6
CWW 125-3-2.5 CFW 125-3-2.5	2-way ZTV15-0.4 3-way ZTR15-0.4	0.4
CWW 160-2-2.5 CFW 160-2-2.5	2-way ZTV15-0.6 3-way ZTR15-0.6	0.6
CWW 160-3-2.5 CFW 160-3-2.5	2-way ZTV15-0.4 3-way ZTR15-0.4	0.4
CWW 200-2-2.5 CFW 200-2-2.5	2-way ZTV15-0.6 3-way ZTR15-0.6	0.6
CWW 200-3-2.5 CFW 200-3-2.5	2-way ZTV15-1.0 3-way ZTR15-1.0	1.0
CWW 250-2-2.5 CFW 250-2-2.5	2-way ZTV15-1.6 3-way ZTR15-1.6	1.6
CWW 250-3-2.5 CFW 250-3-2.5	2-way ZTV15-1.6 3-way ZTR15-1.6	1.6
CWW 315-2-2.5 CFW 315-2-2.5	2-way ZTV15-1.6 3-way ZTR15-1.6	1.6
CWW 315-3-2.5 CFW 315-3-2.5	2-way ZTV15-1.6 3-way ZTR15-1.6	1.6
CWW 400-2-2.5 CFW 400-2-2.5	2-way ZTV20-2.5 3-way ZTR20-2.5	2.5
CWW 400-3-2.5 CFW 400-3-2.5	2-way ZTV20-2.5 3-way ZTR20-2.5	2.5
CWW 500-2-2.5 CFW 500-2-2.5	2-way ZTV20-4.0 3-way ZTR20-4.0	4.0

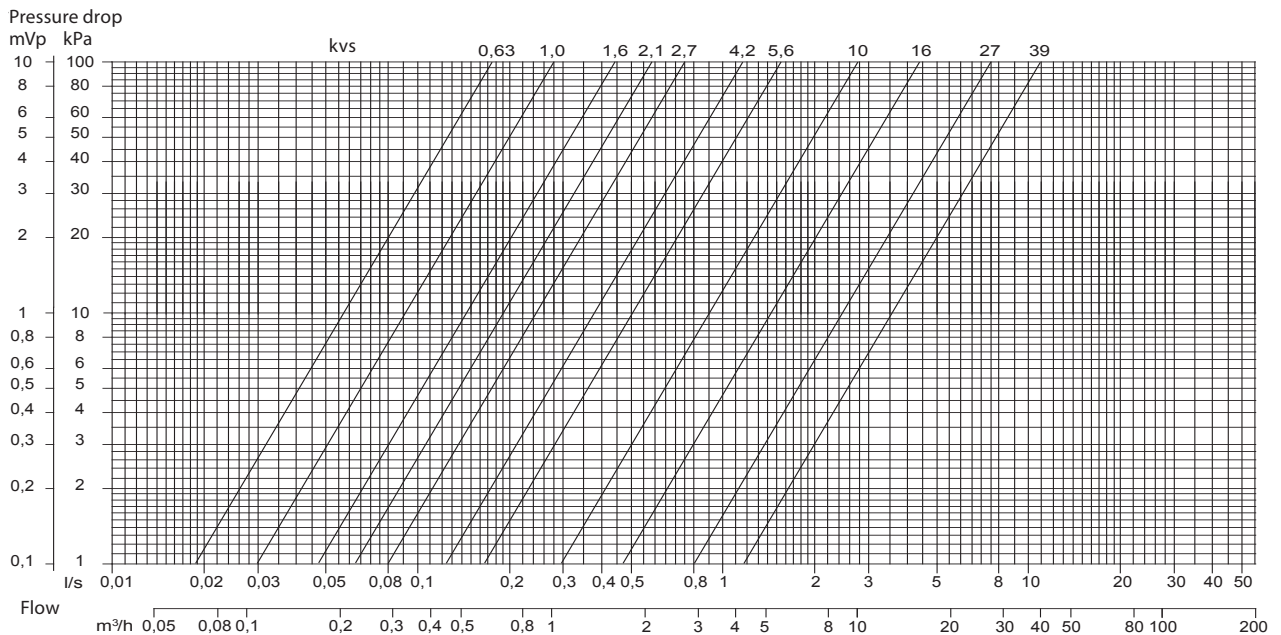
Water temp. 185 °C max.

Actuators RVAN5-24 (3-position) or RVAN5-24A (0...10 V) can be used for all MTVS/MTRS valves.

Type of CWW / CFW	Valve type	Kvs
CWW 100-2-2.5	2-way MTVS15-1.0	1.0
CWW 100-3-2.5	2-way MTVS15-1.0	1.0
CWW 125-2-2.5 CFW 125-2-2.5	2-way MTVS15-1.0	1.0
CWW 125-3-2.5 CFW 125-3-2.5	2-way MTVS15-1.0	1.0
CWW 160-2-2.5 CFW 160-2-2.5	2-way MTVS15-1.0	1.0
CWW 160-3-2.5 CFW 160-3-2.5	2-way MTVS15-1.0	1.0
CWW 200-2-2.5 CFW 200-2-2.5	2-way MTVS15-1.0	1.0
CWW 200-3-2.5 CFW 200-3-2.5	2-way MTVS15-1.0	1.0
CWW 250-2-2.5 CFW 250-2-2.5	2-way MTVS15-1.0	1.0
CWW 250-3-2.5 CFW 250-3-2.5	2-way MTVS15-1.6 3-way MTRS15-1.6	1.6
CWW 315-2-2.5 CFW 315-2-2.5	2-way MTVS15-1.6 3-way MTRS15-1.6	1.6
CWW 315-3-2.5 CFW 315-3-2.5	2-way MTVS15-1.6 3-way MTRS15-1.6	1.6
CWW 400-2-2.5 CFW 400-2-2.5	2-way MTVS15-2.1 3-way MTRS15-2.1	2.1
CWW 400-3-2.5 CFW 400-3-2.5	2-way MTVS15-2.7 3-way MTRS15-2.7	2.7
CWW 500-2-2.5 CFW 500-2-2.5	2-way MTVS15-2.7 3-way MTRS15-2.7	2.7

CWW / CFW

Pressure Drop Chart for Valves





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