

## Water Cooled Wirewound Resistor



### FEATURES

- Direct cooling without heat sink
- Better power / volume ratio
- Non-inductive optional
- 1 WCR = 6 wirewound resistors = 5 thick-film resistors
- Up to 6 resistive functions on 1 WCR tube
- 1 single supply for several functions (snubber and divider)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING <sup>(1)</sup> W	RESISTANCE RANGE Ω	TOLERANCE ± %
WCR 30 x 250	1500	4.7 to 56K	5
WCR 38 x 250	2000	4.7 to 56K	5
WCR 38 x 300	2500	4.7 to 56K	5

**Note**
<sup>(1)</sup> Water inlet temperature 60 °C with 40 % glycol, flow rate 5 l/min

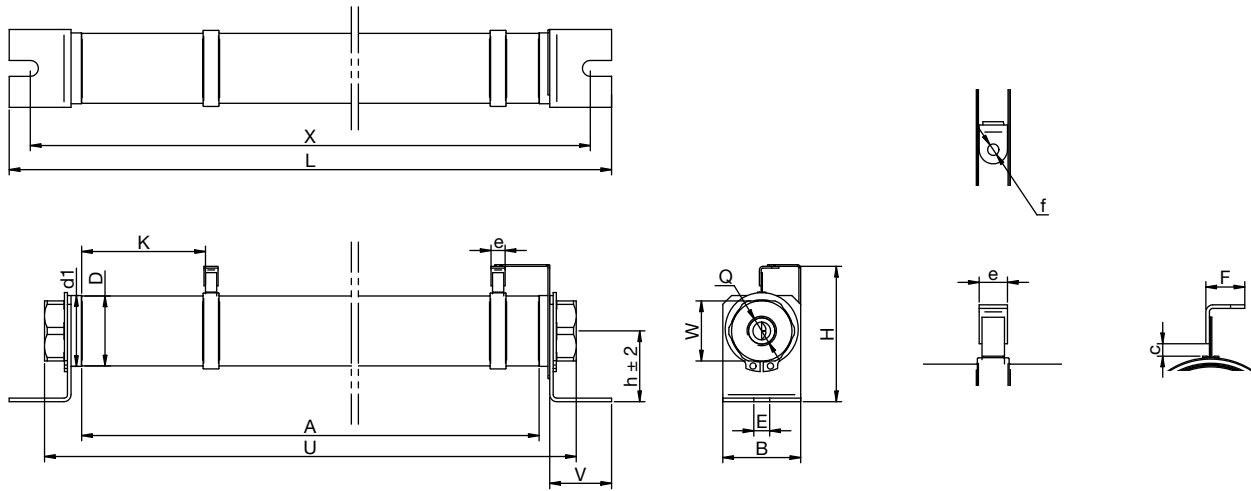
### TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Temperature coefficient	ppm/°C	100 ppm/°C (typical)
Maximum working voltage	V	Up to 3500 V (6600 V on specific request)
Operating temperature range	°C	-55 to +120

### GENERAL CHARACTERISTICS

Core	Ceramic
Winding	NiCr alloy fully insulated from water
Hydraulic plugs	Stainless steel (corrosion free)
Coating	Vitreous enamel or silicone coating <sup>(1)</sup>
Ohmic values	E12 (4.7 Ω to 56 kΩ)
Inductance	Non-inductive type on request
Cooling	Industrial or deionized water; coolant mixtures up to 60 % glycol
Operating pressure	1 bar to 6 bars
Test pressure	10 bars
Flow	5 l/min to 15 l/min
CTI Index	> 600
Creeping distance	On request
Clearance distance	On request
Electrical connections	M3 screw and nut (other on request)
Mounting	Vertically (recommended)
Overload	2 x P <sub>n</sub> 10 s (θ <sub>60</sub> °C at 5 l/min)
Endurance	1000 cycles P <sub>n</sub> 30 s/30 s; variation < 5 %
Pressure drop	0.8 bar for WCR 30 mm x 250 mm; 0.25 bar for WCR 38 mm x 250 mm and WCR 38 mm x 300 mm (flow rate 10 l/min)

**Note**
<sup>(1)</sup> For PD reason (withstand)

**DIMENSIONS** in millimeters


TYPE	30 x 250	38 x 250	38 x 300
Water pipe diameter	Ø 8	Ø 10	Ø 10
A	250	250	300
B + 0.5 / - 0	32	44	44
c	3.5	3.5	3.5
C	14.5	14.5	14.5
D <sub>max.</sub>	35	43	43
d1	32	40	40
E	7	9	9
e	8	8	8
f	Ø 3.2	Ø 3.2	Ø 3.2
F	11	11	11
H <sub>max.</sub>	54	80	80
h ± 2	25	40	40
K	(1)	(1)	(1)
L <sub>max.</sub>	304	335	385
Ø	30	38	38
Q	G 3/8 <sup>(2)</sup>	G 3/8 <sup>(2)</sup>	G 3/8 <sup>(2)</sup>
U	288	292	342
V	20	35	35
W	24	34	34
X ± 2	286	308	358
Weight	1 kg	1.3 kg	1.5 kg

**Notes**

- (1) Creeping / clearance on request
- (2) Other hydraulic connections on request

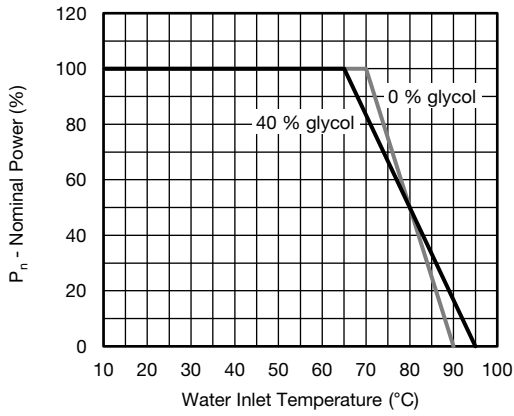
**SPECIFIC CHARACTERISTICS**


Fig. 1 - Nominal Power Dissipated  
According to Water Inlet Temperature  
 $P_n = f(\text{Water Inlet Temperature})$   
Flow Rate = 5 l/min

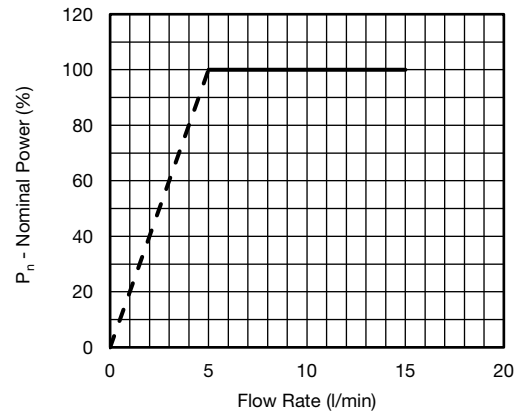


Fig. 2 - Power Dissipated According to the Flow Rate  
 $P_n = f(\text{Flow Rate})$   
Temperature = 60 °C

**OPTIONS**

On request

PART NUMBER INFORMATION				
WCR	38 x 250	A	120 Ω	5 %
MODEL	TYPE	"A" FOR NON-INDUCTIVE	VALUE	TOLERANCE



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