

High Density Cartridge Heater (RAC)



The form of construction of these heating elements, allows its use in adverse conditions, such as vibration and high temperatures and that can reach over 500 ° on the surface of the cartridge

High Density Heaters (RAC), are ideal for the installation of a high power in minimal space.

General Specifications

- Flexible leads from inside in standard models.
- 250mm Fiberglass/Silicone leads in standard models.
- 1000mm Fiberglass/Silicone leads (with thermocouple FeCu / Ni (J), PTFE insulation), standard models.
- Standardized measures in metric diameters (mm).

6,50mm	8mm	12,50mm	16mm	20mm
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∅ Tolerance:

Up to 300 mm: -0,02 -0,06
 Up to 1.000 mm: -0,02 -0,10
 Over 1.000mm: ± 0,10

- Standard diameters in inches (")

1/8"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"
3,17	6,35	7,93	9,52	12,70	15,87	19,05

∅ Tolerance:

Up to 300 mm: -0,02 -0,06
 Up to 1.000 mm: -0,02 -0,10
 Over 1.000mm: ± 0,10

- Length tolerance:

Up to 130mm: +0 -2 mm
 More than 130mm: ±1.5%.

Other Diameter

- We are able to supply any diameter between 3 mm and 25 mm.
- Other diameters on request.
- TIG welded stainless tube.
- Flexible fiberglass insulated nickel wires from inside (standard models).
- Core and insulation compacted magnesium oxide.
- Heating wire Ni/Cr80/20.
- ∅ Tolerance for diameters from 25 mm ±0,10.

Quality control

- Insulation: 5 MΩm at 500 V DC Cold (minimum).
- Dielectric strength: 1500 V 1 second.
- Nominal Power: + 5% - 10%

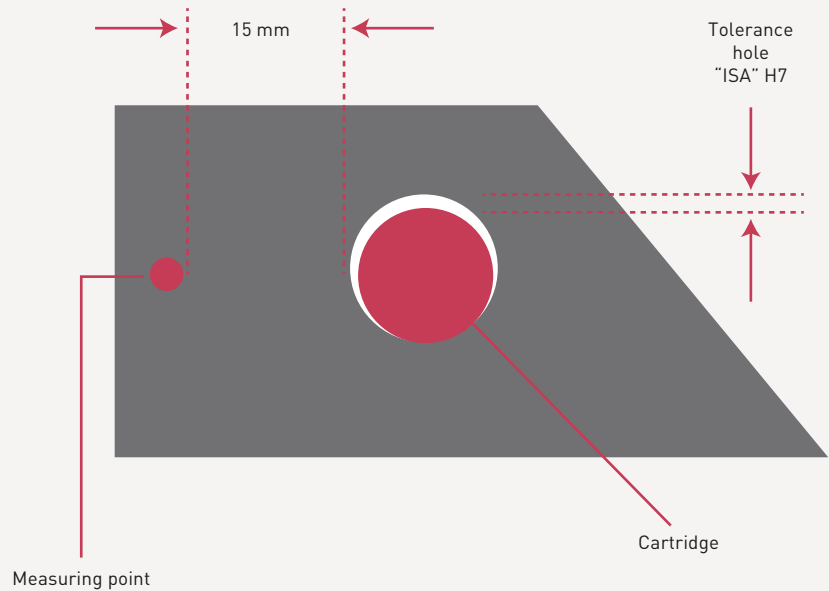
Instructions (for guidance) to place and mount

HOLE TOLERANCE CHART

More than	Till	Tolerance	Hole
3	6	-0	+0,012
6	10	-0	+0,015
10	18	-0	+0,018
18	30	-0	+0,021

The adjustment of the cartridge in the hole is very important for the proper functioning and performance.

The regulation of the temperature is essential and for this we recommend to place the measuring point not more than 15mm separately from the cartridge.



Connection types for standard cartridges with built-in THERMOCOUPLE

We can place thermocouple type J (Fe Cu Ni), type K (Ni Cr Ni), type T (Cu Cu Ni)

If the customer says otherwise the thermal sensor is installed always insulated to avoid problems on sensitive control devices.



OPTION 1. THERMOCOUPLE ON THE CARTRIDGE BASE ISOLATED

STANDARD Placement of the thermocouple. Right choice to avoid problems sensitive control devices.



OPTION 2. THERMOCOUPLE ON THE CARTRIDGE BASE GROUNDED.

Option indicated when rapid measurement is required.

NOTE: This option is not valid for highly sensitive regulation devices



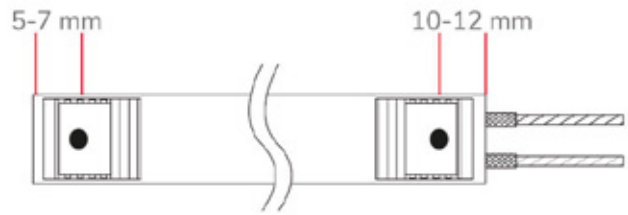
OPTION 3. THERMOCOUPLE ISOLATED AND CENTERED

This option can be performed on elements from 3/8 "(9,52) ϕ



CARTRIDGE HEATERS WITH PT-100 SENSOR

They can be manufactured as follows:
Position 1. Starting from 6.35 mm ϕ .
Position 2. Starting from 12.50 mm ϕ .



Cartridge heaters with power distribution

It is used where it is necessary to spread out a completely uniform temperature to a mass. It can be made with any type of connection type.

More heat at the ends



More heat in the middle



Different heating zones



Standard leads length: Without Thermocouple 250mm / With Thermocouple Tipo J (F-CON) 1000mm

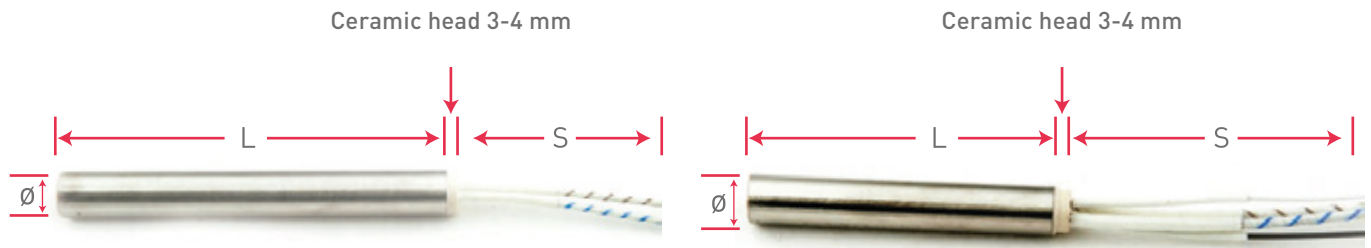


TABLE OF STANDARD CARTRIDGE HEATERS

DIAMETER ø MM.		LENGTH L. MM.	WATTAGE AT 230 V												
6.50	-0,02 -0,06	30	160	200	300										
		40	100	125	160	175	200								
		50	100	125	150	160	200	250							
		60	125	160	180	200	250	315							
		80	125	160	180	200	250	280	315	350					
		100	100	160	200	220	250	315	350	400					
		130	220	300	350	400									
		160	250	350	400										
		180	±1,5%	250	350	400									
		200	±1,5%	350	400	500									
250	±1,5%	250	350	400	500										
8	-0,02 -0,06	40	100	140	160	200	250								
		50	125	160	200	250	315								
		60	100	125	140	160	200	220	250	280	315	350			
		80	160	180	200	250	280	315	350	400					
		100	180	200	250	280	315	400							
		130	250	315	400										
		160	200	315	400										
		180	±1,5%	250	300	400	500								
		200	±1,5%	300	400	500									
		250	±1,5%	300	400	500									
10	-0,02 -0,06	40	100	125	160	175	200	250	315	400					
		50	100	125	160	175	200	250	315	400	500				
		60	125	160	180	200	250	315	350	400	450	500			
		80	100	150	160	200	220	250	315	400	500	600	630		
		100	125	150	220	250	315	350	400	500	560	630	700	850	
		130	250	315	350	400	500	630	750	800	1000				
		160	160	315	400	500	600	630	750	800					
		180	±1,5%	300	500	600	800								
		200	±1,5%	250	300	400	500	600	630	1000					
		250	±1,5%	200	400	630	800	1000	1600						

TABLE OF STANDARD CARTRIDGE HEATERS

DIAMETER ø MM.		LENGTH L. MM.	WATTAGE AT 230 V										
12.50	-0,02 -0,06	40	↑	100	160	200	250	315	400				
		50		100	150	160	200	250	315	400	500		
		60		125	160	200	250	315	400	500			
		80	+0 -2	150	200	250	315	400	500	630	800		
		100		250	315	400	500	630	800	1000			
		130	↓	350	400	500	630	800	1000	1250			
		160	↑	400	500	630	800	1000	1250				
		180		500	670	800	1000	1250					
		200	±1,5%	500	630	800	900	1000	1250	1500			
		250	↓	630	800	900	1000	1500					
300		600	1000	1250	1500	2000							
16	-0,02 -0,06	40	↑	100	160	200	250	315	400	500			
		50		160	200	250	315	400	500	630			
		60		160	200	250	315	400	500	630			
		80	+0 -2 mm	250	280	315	400	500	630	800	850	1000	
		100		350	400	500	630	800	1000	1250			
		130	↓	400	500	630	700	800	1000	1100	1400	1800	
		160	↑	500	630	800	900	1000	1250	1600	1800		
		180		600	850	1000	1250	1500	1800				
		200	±1,5%	500	800	1000	1250	2000					
		250	↓	800	1000	1250	1600	2000					
300		1000	1250	1500	1800	2000							
20	-0,02 -0,06	50	↑	200	250	315	400						
		60		200	315	400	500	630	800				
		80	+0 -2 mm	315	350	400	500	800	1000	1250			
		100		400	450	500	630	800	1000	1250	1400	1600	1800
		130	↓	500	630	900	1000	1250	1400	1800	2200		
		160	↑	800	1000	1100	1250	1800	2200				
		180		1000	1250	1600	1800						
		200	±1,5%	800	1000	1250	1600	2000	2500				
		250	↓	1000	1250	1600	2000	2500					
		300		1000	1250	1600	2000	2500					

TABLE OF STANDARD CARTRIDGE HEATERS

DIAMETER ø MM.		LENGTH L. MM.	WATTAGE AT 230 V								
1/4"	-0,02 (6,35) -0,06	31	↑	160	200	300					
		38		100	125	160	175	200			
		50		100	125	150	160	200	250		
		63		125	160	180	200	250	315		
		76		125	160	180	200	250	280	315	350
		82	+0 -2	125	160	180	200	250	280	300	350
		101		100	160	200	220	250	315	350	400
		127	↓	220	300	350	400				
		133		220	300	350	400				
		152	↑	220	350	400					
		165	±1,5%	250	350	400					
		177		250	350	400					
		203	↓	250	350	400					
		254		250	350	400	450				

TABLE OF STANDARD CARTRIDGE HEATERS

DIAMETER ø MM.	LENGTH L. MM.		WATTAGE AT 230 V															
5/16" -0,02 (7,93) -0,06	1 1/2"	38	±0 -2 mm	100	140	160	200	250										
	2"	50		125	160	200	250	315										
	2 1/2"	63		100	125	140	160	180	200	220	250	280	315	350				
	3"	76		160	180	200	250	280	315	350	400							
	3 1/4"	82		160	200	315	400											
	4"	101		180	200	220	250	280	315	400								
	5"	127		250	315	400												
	5 1/4"	133		250	315	400												
	6"	152		200	315	400												
	6 1/2"	165		±1,5%	250	315	400											
7"	177		250	315	400													
3/8" -0,02 (9,52) -0,06	1 1/2"	38	±0 -2 mm	100	125	160	175	200	250	315	400							
	2"	50		100	125	160	175	200	250	315	400	500						
	2 1/2"	63		125	160	180	200	250	315	350	400	450	500					
	3"	76		100	150	160	200	220	250	315	400	500	600	630				
	3 1/4"	82		160	250	300	400	500	630									
	4"	101		125	150	220	250	315	350	400	500	560	630	700	850			
	5"	127		250	300	315	350	400	500	630	750	800	1000					
	5 1/4"	133		315	400	500	600	800										
	6"	152		160	315	400	500	600	630	750	800							
	6 1/2"	165		±1,5%	400	500	630											
7"	177		400	500	600	700	800											
8"	203		250	300	400	500	600	630	1000									
10"	254		200	400	630	800	1000	1600										
1/2" -0,02 (12,70) -0,06	1 1/2"	38	±0 -2 mm	100	160	200	250	315	400									
	2"	50		100	150	160	200	250	315	400	500							
	2 1/2"	63		125	160	200	250	315	400	500								
	3"	76		150	200	250	315	400	500	630	800							
	3 1/4"	82		160	200	315	500	630	800									
	4"	101		250	315	400	500	630	800	1000								
	5"	127		350	400	500	630	800	1000	1250								
	5 1/4"	133		300	400	630	1000	1250										
	6"	152		400	500	630	800	1000	1250									
	6 1/2"	165		±1,5%	500	800	1250											
	7"	177			500	670	800	1000	1250									
	8"	203			500	630	800	900	1000	1500								
10"	254		630	800	900	1000	1250	1500										
12"	304		600	1000	1250	1500	2000											
5/8" -0,02 (15,87) -0,06	1 1/2"	38	±0 -2 mm	100	160	200	250	315	400	500								
	2"	50		160	200	250	315	400	500	630								
	2 1/2"	63		160	200	250	315	400	500	630								
	3"	76		250	280	315	400	500	630	800	850	1000						
	3 1/4"	82		350	400	500	630	800										
	3 1/2"	88		280	300	400	630	800	1000									
	4"	101		350	400	500	630	800	1000	1250								
	5"	127		400	500	630	700	800	1000	1100	1400	1800						

TABLE OF STANDARD CARTRIDGE HEATERS

DIAMETER \varnothing MM.	LENGTH L. MM.		WATTAGE AT 230 V								
5/8" -0,02 (15,87) -0,06	5 1/4" 133	±1,5%	500	700	1100	1400	1800				
	6" 152		500	630	800	900	1000	1250	1600	1800	
	6 1/2" 165		630	900	1600	1800					
	7" 177		600	850	1000	1250	1500	1800			
	8" 203		500	800	1000	1250	2000				
	10" 254		800	1000	1250	1600	2000				
	12" 304		1000	1250	1500	1800	2000				
3/4" -0,02 (19,05) -0,06	2" 50	±1,5%	200	250	315	400					
	2 1/2" 63		200	315	400	500	630	800			
	3" 76		315	350	400	500	800	1000	1250		
	3 1/4" 82		+0 -2 mm	315	350	400	500				
	4" 101		400	450	500	800	1000	1250	1400	1600	1800
	5" 127		500	630	900	1000	1250	1400	1800	2200	
	5 1/4" 133		500	630	900	1000					
	6" 152		800	1000	1100	1250	1800	2200			
	6 1/2" 165		800	1000	1100	1250					
	7" 177		800	1000	1250	1000	1250				
	8" 203		800	1000	1250	1600	2000	2500			
	10" 254		1000	1250	1600	2000	2500				
	12" 304			1250	1600	2200	2500				