Refrigeration Grade Silicone Heat Cable

Argus Heating design and manufacture high quality silicone heat cable to suit specific refrigeration applications.

Applications

Typically used for:

- Food display units to remove condensation.
- Freezers to prevent frost/ice build-up.
- Cool rooms and cabinet doors for de-icing.

Features and benefits

- Cables are made to specific wattage, length and termination requirements.
- Silicone insulation for optimal performance.
- Moisture proof leads or flexes available.

Construction

- Resistance wire wound in a spiral around a flexible fibreglass core or bunched resistance wire.

Selecting the right heat cable

The amount of heat (wattage) required will vary dependent on the application.

For example, 20-40 W/m is commonly used for walk-in freezers with an operating temperature of -30 °C. Reach-in and walk-in freezers that work at higher temperatures generally need 8-15 W/m.

The following page provides a cable selection example and chart.

Note: these wattages are only general recommendations. Each application is unique and careful testing using thermocouples should be carried out by the customer, to ensure a correct and safe design.

Silicone heat cable is designed to suit specific refrigeration applications. The amount of heat (wattage) required will vary for each unique environment and application.

Contact Argus Heating for expert advice on the best heating solution for your application.

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Cable selection example

Voltage: 230 V. Heater length required: 7.3 m. W/m required: 20 W.

1 Calculation for approximation (see chart below). Select 20 W/m in top row, follow column down to 7.27 m, and move left across the row to select the 50 ohm/m cable.

2 Calculation for exact requirement (using Ohms Law)

Total watts = length x W/m = 7.3 m x 20 W/m = 146 W total.

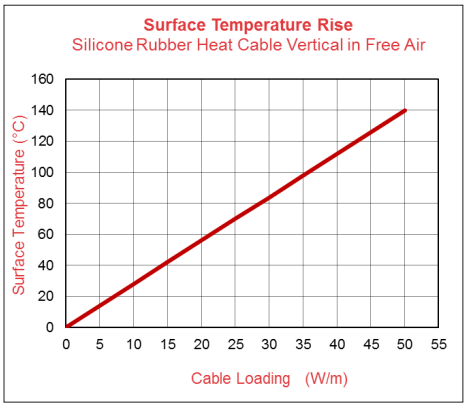
$$\text{Resistance total} = \frac{\text{Voltage}^2}{\text{watts total}} = \frac{230^2}{146} = 362 \text{ ohms}$$

$$\text{Resistance per meter} = \frac{R}{\text{length}} = \frac{362 \text{ ohms}}{7.3 \text{ m}} = 49.6 \text{ ohm/m (50 ohm/m cable)}$$

3 Surface Temperature

Surface temperature can be checked by using the chart at right. The heat transfer medium will vary the surface temperature. Please note you would expect on average the heat cable temperature to be 20-30% less than shown on the chart.

E.g. Select 20 W/m. Follow the grid up to the intersect line then select the corresponding approximate surface temperature on the Y-axis. Add ambient 20 °C to provide an approximate surface temperature of 80 °C.



Example of heat cable at various outputs and lengths.

Silicone Rubber Heating Cable / Refrigeration / 3mm OD / 150°C / 230V

Stock code	Ω /m	40W/m		35 W/m		30 W/m		25 W/m		20 W/m		15 W/m		10 W/m		5 W/m	
100m Reels		A	m	A	m	A	m	A	m	A	m	A	m	A	m	A	m
HS0002R100	2	4.47	25.71	4.18	27.49	3.87	29.69	3.54	32.53	3.16	36.37	2.74	41.99	2.24	51.43	1.58	72.73
HS0005R100	5	2.83	16.26	2.65	17.39	2.45	18.78	2.24	20.57	2.00	23.00	1.73	26.56	1.41	32.53	1.00	45.99
HS0010R100	10	2.00	11.50	1.87	12.29	1.73	13.28	1.58	14.55	1.41	16.26	1.22	18.78	1.00	23.00	0.71	32.53
HS0015R100	15	1.63	9.39	1.53	10.04	1.41	10.84	1.29	11.87	1.15	13.28	1.00	15.33	0.82	18.78	0.58	26.56
HS0025R100	25	1.26	7.27	1.18	7.78	1.10	8.39	1.00	9.20	0.89	10.29	0.77	11.88	0.63	15.55	0.45	20.57
HS0035R100	35	1.07	6.15	1.00	6.57	0.93	7.09	0.85	7.77	0.76	8.69	0.65	10.04	0.53	12.29	0.38	17.39
HS0045R100	45	0.94	5.42	0.88	5.79	0.82	6.26	0.75	6.86	0.67	7.67	0.58	8.85	0.47	10.84	0.33	15.33
HS0050R100	50	0.89	5.14	0.84	5.49	0.77	5.94	0.71	6.51	0.63	7.27	0.55	8.40	0.45	10.29	0.32	14.55
HS0060R100	60	0.82	4.69	0.76	5.02	0.71	5.42	0.65	5.94	0.58	6.64	0.50	7.67	0.41	9.39	0.29	13.28
HS0075R100	75	0.73	4.12	0.68	4.49	0.63	4.85	0.58	5.31	0.52	5.94	0.45	6.86	0.37	8.40	0.26	11.88
HS0100R100	100	0.63	3.64	0.59	3.89	0.55	4.20	0.50	4.60	0.45	5.14	0.39	5.94	0.32	7.27	0.22	10.28
HS0150R100	150	0.52	2.97	0.48	3.17	0.45	3.43	0.41	3.76	0.37	4.20	0.32	4.85	0.26	5.94	0.18	8.40
HS0200R100	200	0.45	2.57	0.42	2.75	0.39	2.97	0.35	3.25	0.32	3.64	0.27	4.20	0.22	5.14	0.16	7.27
HS0300R100	300	0.37	2.10	0.34	2.25	0.32	2.42	0.29	2.66	0.26	2.97	0.22	3.43	0.18	4.20	0.13	5.94

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