Process Duct Heaters - WX

Application

Caloritech™ WX duct heaters are designed for installation in process ducts to heat air or other non-hazardous gases.

Construction

Standard heaters have replaceable “W” shaped Incoloy® elements each rated at 2 kW. Multiple circuits are selected to limit the line current in each circuit to 48 amps.

Type WXL heaters have steel mounting plate and terminal box with a stainless steel element support plate.

Type WXH heaters have stainless steel mounting plate, terminal box and support plate suitable for high temperature operation.

Installation

Installation can be in any position; top, bottom or side mounting. The heater is inserted into the duct through a hole and secured with suitable bolts, studs or screws. For heavier units duct work may require reinforcement.

In larger ducts, internal duct baffles may be required to ensure that the minimum air velocity as shown in Figure 27, page C23 passes over the elements.

All process duct heater installations must include a device such as a thermocouple control or a proximity high limit cutout to limit the outlet temperature in the event of fan failure or malfunction of the process temperature regulator.

Special Features

Type WX heaters are available in other sizes and ratings. Units can be supplied with duct section, fan assembly and control panel. Consult factory for additional information.

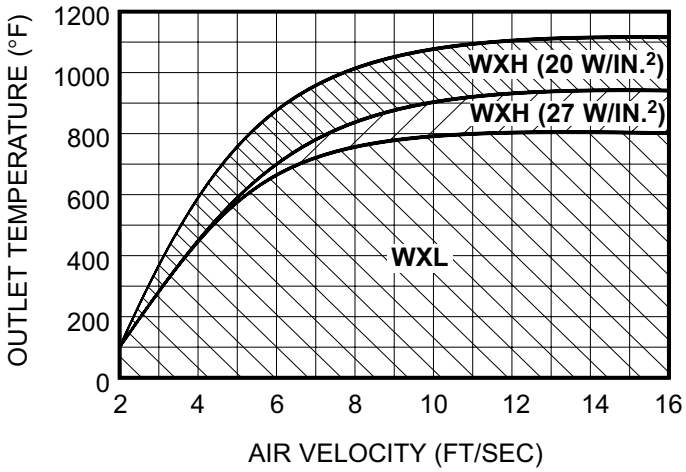

Figure 27 – Heater Selection

Selection

WXL heaters are suitable for outlet air temperatures up to 797°F (425°C) providing the air velocity is not less than the required velocity shown on Figure 27, page C23. If the air velocity is less, contact factory for a modified heater with a lower watt density to suit your conditions.

WXH heaters are suitable for outlet air temperatures up to 1112°F (600°C) providing the air velocity is not less than the required velocity shown on Figure 27, page C23. Note that type WXH heaters are available as standard in two separate watt densities.

If the air velocity is less than indicated by Figure 27, page C23 contact factory for a modified heater with a lower watt density to suit your conditions. Use Figure 28 and Figure 29 to determine approximate kW requirements

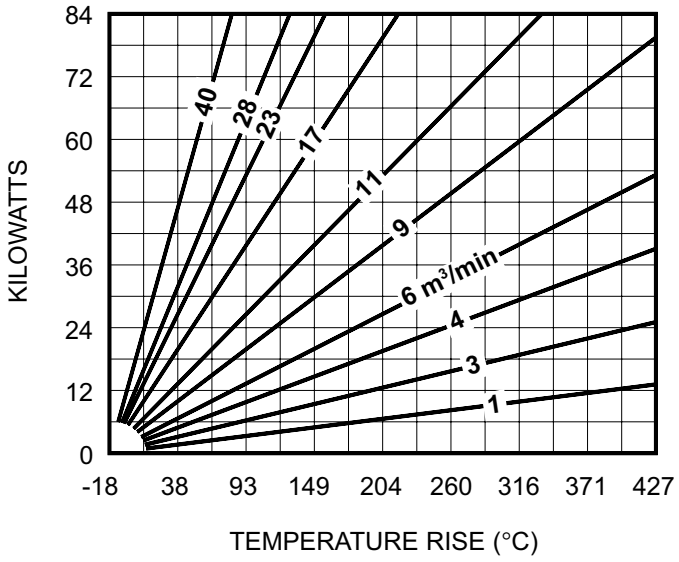

Figure 28 – Recommended Kilowatts

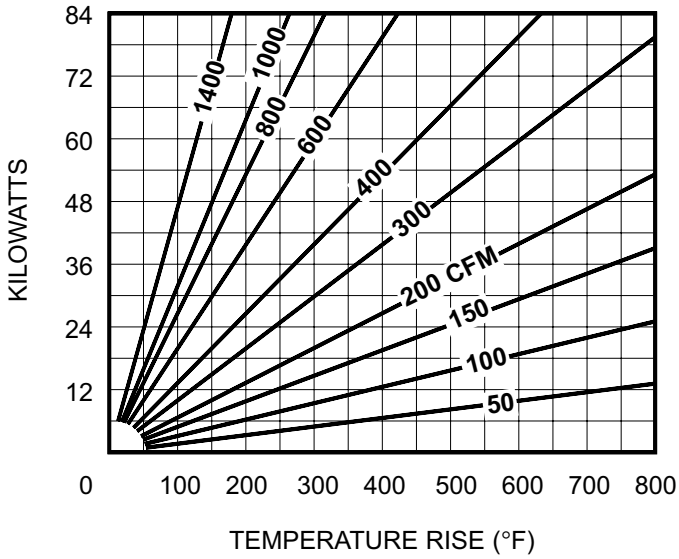

Figure 29 – Recommended Kilowatts

Table 16 – 'B', 'E', and 'F' Dimensions

Model	W/in²	W/cm²	'B' Dim.		'E' Dim		'F' Dim	
			in	mm	in	mm	in	mm
WXL	27	4.2	16.1	410	5.9	150	1.4	35
WXH	27	4.2	16.1	410	9.8	250	0	0
WXH	20	3.1	20.9	530	9.8	250	0	0

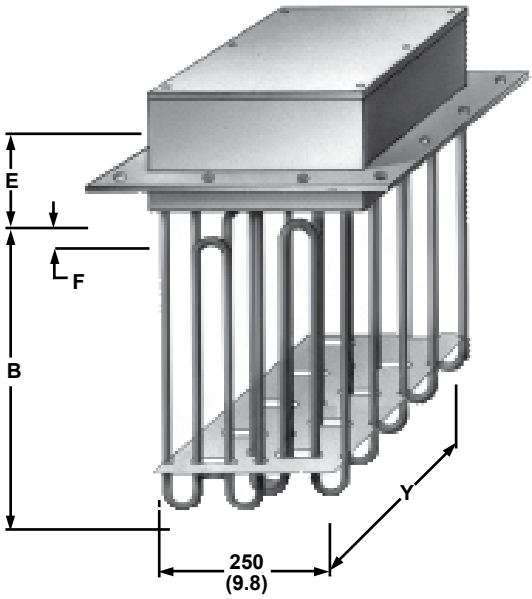

Figure 30

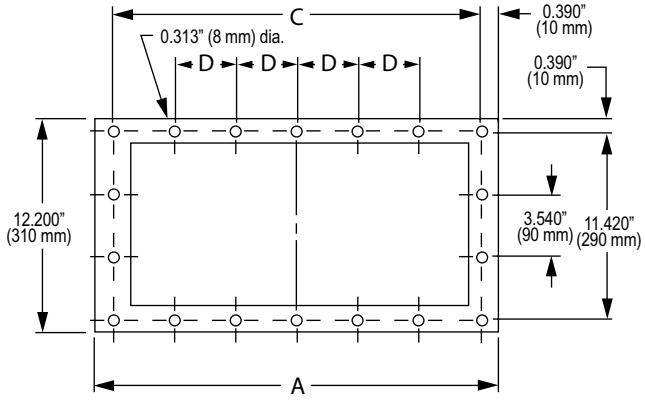

Figure 31 –Recommended Kilowatts

Table 17 – Type WXL: Intermediate Temperature Design, 27 W/in² (4.2 W/cm²)

kW	Standard. Volts				'A' Dimension		'C' Dimension		'D' Dimension		'Y' Dimension		Superceded Catalog No.	Catalog No.	Net Weight	
	208, 240		480, 600													
	1Ø	3Ø	1Ø	3Ø	in	mm	in	mm	in	mm	in	mm			lbs	kg
6	✓				6.1	155	5.3	135	–	–	4.3	110	TDH-6C	WXL-6	15.4	7
12	✓				9.3	235	8.5	215	–	–	7.5	190	TDH-12C	WXL-12	26.5	12
18	✓				12.2	310	11.4	290	1.97	50	10.4	265	TDH-18C	WXL-18	39.7	18
24	–				15.2	385	14.4	365	3.54	90	13.4	340	TDH-24C	WXL-24	48.5	22
30	–				18.1	460	17.3	440	4.33	110	16.3	415	TDH-30C	WXL-30	57.3	26
36	–	✓	✓	✓	21.3	540	20.5	520	5.12	130	19.5	495	TDH-36C	WXL-36	63.9	29
42	–				24.2	615	23.4	595	5.9	150	22.4	570	TDH-42C	WXL-42	72.8	33
48	–				27.2	690	26.4	670	6.69	170	25.4	645	TDH-48C	WXL-48	79.4	36
54	–				30.1	765	29.3	745	7.28	185	28.3	720	TDH-54C	WXL-54	86.0	39
60	–				33.1	840	32.3	820	8.07	205	31.5	800	TDH-60C	WXL-60	92.6	42
72	–				39	990	38.2	970	6.3	160	37.4	950	–	WXL-72	105.8	48
84	–				44.9	1140	44.1	1120	7.28	185	43.3	1100	–	WXL-84	119.1	54

Table 18 – Type WXH: High Temperature Design (Up To 950°F/ 510°C Outlet Temperature), 27 W/in² (4.2 W/cm²)

kW	Standard. Volts				'A' Dimension		'C' Dimension		'D' Dimension		'Y' Dimension		Catalog No.	Net Weight	
	208, 240		480, 600												
	1Ø	3Ø	1Ø	3Ø	in	mm	in	mm	in	mm	in	mm		lbs	kg
12	✓				9.3	235	8.5	215	–	–	7.5	190	WXH-12	28.7	13
18	✓				12.2	310	11.4	290	1.97	50	10.4	265	WXH-18	41.9	19
24	–				15.2	385	14.4	365	3.54	90	13.4	340	WXH-24	55.1	25
36	–	✓	✓	✓	21.3	540	20.5	520	5.12	130	19.5	495	WXH-36	68.3	31
48	–				27.2	690	26.4	670	6.69	170	25.4	645	WXH-48	81.6	37
60	–				33.1	840	32.3	820	8.07	205	31.5	800	WXH-60	94.8	43
72	–				39	990	38.2	970	6.3	160	37.4	950	WXH-72	108.0	49
84	–				44.9	1140	44.1	1120	7.28	185	43.3	1100	WXH-84	121.3	55

Table 19 – Type WXH - High Temperature Design (Up To 1100°F/ 593°C Outlet Temperature) - 20 W/in² (3.1 W/cm²)

kW	Standard. Volts				'A' Dimension		'C' Dimension		'D' Dimension		'Y' Dimension		Catalog No.	Net Weight	
	208, 240		480, 600												
	1Ø	3Ø	1Ø	3Ø	in	mm	in	mm	in	mm	in	mm		lbs	kg
12	✓				9.3	235	8.5	215	–	–	7.5	190	WXH-1222	30.9	14
18	✓				12.2	310	11.4	290	1.97	50	10.4	265	WXH-1822	44.1	20
24	–				15.2	385	14.4	365	3.54	90	13.4	340	WXH-2422	57.3	26
36	–	✓	✓	✓	21.3	540	20.5	520	5.12	130	19.5	495	WXH-3622	70.5	32
48	–				27.2	690	26.4	670	6.69	170	25.4	645	WXH-4822	83.8	38
60	–				33.1	840	32.3	820	8.07	205	31.5	800	WXH-6022	97.0	44
72	–				39	990	38.2	970	6.3	160	37.4	950	WXH-7222	110.2	50
84	–				44.9	1140	44.1	1120	7.28	185	43.3	1100	WXH-8422	123.5	56