

CIR/CIRM

CIR 1/8" to 1-1/4" dia. & CIRM 6mm to 20mm dia. Cartridge Heater (cont'd.)

CIR Cartridge Design Guide											
Diameter	Size	Code	1/8"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"	1-1/4"
	Decimal		.121+/- .002	.246+/- .002	.308+/- .002	.371+/- .002	.496+/- .002	.621+/- .002	.746+/- .002	.996+/- .002	1.246+/- .002
Length	Tolerance		+/-3%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*
Sheath	Incoloy		X	X	X	X	X	X	X	N/A	N/A
	304SS		N/A	N/A	X	X	X	X	X	X	X
Terminations	Leads	MGT	X	X	X	X	X	X	X	X	X
	Leads	PTFE	X	X	X	X	X	X	X	X	X
	Pins		N/A	X	N/A	X	X	X	X	X	X
Seals	Epoxy		X	X	X	X	X	X	X	X	X
	Silicone		NA	X	X	X	X	X	X	X	X
	Cement		X	X	X	X	X	X	X	X	X
	Hermetic Seal	8C	N/A	N/A	N/A	X	X	X	X	N/A	N/A
Configurations	Teflon (leads & cap)	1T	NA	X	X	X	X	X	X	NA	NA
	Leads RA	14C	N/A	X	X	X	X	X	X	X	X
	Braid Straight	13C	X	X	X	X	X	X	X	X	X
	Braid RA	17C	N/A	X	X	X	X	X	X	X	X
	Conduit Straight	4C	N/A	X	X	X	X	X	X	X	X
	Conduit RA	15C/16C	N/A	X	X	X	X	X	X	X	X
	Copper Straight	1B	N/A	X	N/A	X	X	X	X	N/A	N/A
	Copper RA	1C	N/A	X	N/A	X	X	X	X	N/A	N/A
	Strain Relief	19C	N/A	X	X	X	X	X	X	X	X
	Protective Spring	3C	N/A	X	N/A	X	X	X	X	N/A	N/A
	Ceramic Beads	12C	N/A	X	X	X	X	X	X	X	X
	Fittings	9CS/CD	N/A	X	X	X	X	X	X	X	X
	Flanges	10C	X	X	X	X	X	X	X	X	X
	Wire Pull	11C	N/A	X	X	X	X	X	X	N/A	N/A
	Y Terminals	20C	N/A	N/A	N/A	N/A	N/A	X	X	X	X
	Thermocouple	T1	**	X	X	X	X	X	X	X	X
	Thermocouple	T2	**	X	X	X	X	X	X	X	X
Thermocouple	T3	**	X	X	X	X	X	X	X	X	

*Length tolerance is either +/- % or 3/32" whichever is greater

**Only available at lead end of heater

CIRM Metric Cartridge Design Guide										
Diameter	Size		6mm	6.5mm	8mm	10mm	12mm	12.5mm	16mm	20mm
	Decimal		.234+/- .002	.254+/- .002	.313+/- .002	.392+/- .002	.470+/- .002	.490+/- .002	.628+/- .002	.785+/- .002
Length	Tolerance		+/-2%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*	+/-2%*
Sheath	Incoloy		X	X	X	X	X	X	X	N/A
	304SS		N/A	N/A	X	X	X	X	X	X
Terminations	Leads	MGT	X	X	X	X	X	X	X	X
	Leads	PTFE	X	X	X	X	X	X	X	X
	Pins		X	X	N/A	X	X	X	X	N/A
Seals	Epoxy		X	X	X	X	X	X	X	X
	Silicone		X	X	X	X	X	X	X	X
	Hermetic Seal	8C	N/A	X	N/A	N/A	N/A	X	N/A	N/A
	Cement		X	X	X	X	X	X	X	X
Configurations	Teflon (leads & cap)	1T	N/A	X	N/A	X	N/A	X	N/A	N/A
	Leads RA	14C	X	X	X	X	X	X	X	X
	Braid Straight	13C	X	X	X	X	X	X	X	X
	Braid RA	17C	X	X	X	X	X	X	X	X
	Conduit Straight	4C	X	X	X	X	X	X	X	X
	Conduit RA	15C/16C	X	X	X	X	X	X	X	X
	Strain Relief	19C	X	X	X	X	X	X	X	X
	Protective Spring	3C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Ceramic Beads	12C	X	X	X	X	X	X	X	X
	Fittings	9CS/CD	X	X	X	X	X	X	X	X
	Flanges	10C	X	X	X	X	X	X	X	X
	Wire Pull	11C	X	X	X	X	X	X	X	X
	Y Terminals	20C	N/A	N/A	N/A	N/A	N/A	N/A	X	X
	Thermocouple	T1	X	X	X	X	X	X	X	X
	Thermocouple	T2	X	X	X	X	X	X	X	X
	Thermocouple	T3	X	X	X	X	X	X	X	X

*Length tolerance is either +/- % or 2.5 mm whichever is greater

**Not available with fittings or flanges

Components

CIR 1/4 - 3/4" Dia. Cartridge Heater (cont'd.)

Specifications and Ordering Information

DIM (In.)		Watts	W/In ²	Model	120V		240V		Wt. (Lbs.)
Dia.	Sheath Length				Stock	PCN	Stock	PCN	
1/2" Diameter									
1/2	14	1,600	76	CIR-3140	—	—	S	276242	0.78
1/2	14	2,300	110	CIR-3142	—	—	—	243900	0.78
1/2	15	1,500	66	CIR-3150	—	—	—	243918	0.84
1/2	16	1,000	41	CIR-3160	—	—	—	243926	0.84
1/2	18	800	30	CIR-3183	—	—	S	140070	1
1/2	18	1,500	55	CIR-3182	—	—	—	243934	
1/2	18	1,700	62	CIR-3180	—	—	S	276250	
1/2	24	1,000	28	CIR-3241	—	—	S	140089	1
1/2	24	1,800	55	CIR-3240	—	—	S	276269	
1/2	30	1,300	29	CIR-3301	—	—	S	140097	
1/2	30	1,900	47	CIR-3300	—	—	NS	276277	2
1/2	36	2,000	40	CIR-3360	—	—	NS	276285	2
5/8" Diameter									
5/8	1-1/4	50	34	CIR-4011	NS	243942	—	—	0.1
5/8	1-1/4	200	135	CIR-4012	S	243950	—	—	0.1
5/8	1-1/4	250	169	CIR-4013	S	243969	—	—	0.1
5/8	1-1/2	100	51	CIR-4016	—	280663	—	280671	0.1
5/8	1-1/2	200	101	CIR-4015	S	275549	S	163053	0.1
5/8	1-1/2	250	126	CIR-4017	—	243977	—	243985	0.1
5/8	2	100	34	CIR-40201	S	243993	—	—	0.13
5/8	2	200	68	CIR-4020	S	276293	S	276306	0.13
5/8	2	300	103	CIR-4021	—	280698	—	163096	0.13
5/8	2	500	171	CIR-4022	—	280719	S	163117	0.13
5/8	2-1/4	100	29	CIR-4023	NS	244005	—	—	0.15
5/8	2-1/4	250	72	CIR-4028	NS	244013	S	244021	0.15
5/8	2-1/4	350	102	CIR-4029	NS	244030	S	244048	0.15
5/8	2-3/8	75	21	CIR-40233	S	140126	—	—	0.15
5/8	2-3/8	75	21	CIR-40235	—	—	S	140142	
5/8	2-3/8	100	27	CIR-40231	—	—	S	140100	
5/8	2-3/8	100	27	CIR-40234	S	140134	—	—	0.15
5/8	2-3/8	125	34	CIR-4025	S	275557	S	275565	
5/8	2-3/8	150	41	CIR-4026	S	275573	S	275581	
5/8	2-3/8	165	45	CIR-40232	—	—	S	140118	0.15
5/8	2-3/8	165	45	CIR-40236	S	140150	—	—	
5/8	2-3/8	180	49	CIR-4027	S	275590	S	275602	
5/8	2-3/8	280	77	CIR-4024	S	276314	S	276322	0.15
5/8	3	150	31	CIR-4035	S	244056	—	—	0.2
5/8	3	250	51	CIR-4031	S	280735	S	163213	0.2
5/8	3	400	82	CIR-4032	—	280751	S	163230	0.2
5/8	3	500	103	CIR-4030	S	276330	S	276349	0.2
5/8	3	600	123	CIR-4033	—	—	S	163272	0.2
5/8	3	750	154	CIR-4034	—	—	S	163299	0.2
5/8	3-3/4	150	24	CIR-40371	S	140177	S	140169	0.24
5/8	3-3/4	240	38	CIR-4038	S	275610	S	275629	
5/8	3-3/4	525	83	CIR-4037	S	276357	S	276365	
5/8	4	250	37	CIR-4044	S	244064	—	244072	0.26
5/8	4	400	58	CIR-4045	—	—	S	244080	0.26
5/8	4	500	73	CIR-4041	—	280794	NS	163352	0.26
5/8	4	600	88	CIR-4046	—	—	NS	244099	0.26
5/8	4	750	110	CIR-4040	S	276373	S	276381	0.26
5/8	4	1,000	147	CIR-4042	—	—	S	163395	0.26
5/8	4-1/4	525	86	CIR-4037	S	276357	S	276365	0.28
5/8	4-1/2	500	76	CIR-40451	S	140871	—	—	
5/8	4-3/8	240	32	CIR-4043	NS	275637	NS	275645	
5/8	5	250	28	CIR-4056	S	244101	—	244110	0.32
5/8	5	500	57	CIR-4051	—	280823	S	163432	0.32
5/8	5	750	85	CIR-4050	S	276390	S	276402	0.32
5/8	5	1,000	114	CIR-4052	—	—	S	163475	0.32
5/8	5	1,300	148	CIR-4053	—	—	S	163491	0.32
5/8	5-3/8	285	30	CIR-4055	S	275653	S	275661	0.34
5/8	5-3/8	800	84	CIR-4054	NS	276410	NS	276429	0.34
5/8	5-1/2	750	87	CIR-40551	NS	140880	—	—	0.38
5/8	6	300	28	CIR-4067	S	244128	S	244136	
5/8	6	500	47	CIR-4061	NS	280866	—	163555	
5/8	6	750	70	CIR-4063	—	—	S	165454	0.38
5/8	6	1,000	93	CIR-4060	S	276437	S	276445	0.38
5/8	6	1,500	140	CIR-4062	NS	244144	S	163598	0.38

Specifications and Ordering Information

DIM (In.)		Watts	W/In ²	Model	120V		240V		Wt. (Lbs.)
Dia.	Sheath Length				Stock	PCN	Stock	PCN	
5/8" Diameter									
5/8	6-1/2	350	30	CIR-4066	S	275670	S	275688	0.41
5/8	6-1/2	500	43	CIR-4068	NS	244152	NS	244160	0.41
5/8	6-1/2	1,000	85	CIR-4065	NS	276453	NS	276461	0.41
5/8	7	500	39	CIR-4072	S	244179	NS	244187	0.45
5/8	7	1,000	79	CIR-4070	—	—	NS	163651	0.45
5/8	7	1,500	118	CIR-4071	—	—	S	280903	0.45
5/8	8	400	28	CIR-4081	S	140185	S	275696	0.50
5/8	8	500	34	CIR-4085	S	244195	S	244208	0.50
5/8	8	750	51	CIR-4082	—	—	S	163715	0.50
5/8	8	850	58	CIR-4088	—	—	S	244216	0.50
5/8	8	1,000	68	CIR-4083	—	—	S	163731	0.50
5/8	8	1,200	82	CIR-4080	NS	276470	NS	276488	0.50
5/8	8	1,500	103	CIR-4084	—	—	S	163774	0.50
5/8	8	2,000	137	CIR-40801	—	—	S	163790	0.50
5/8	8-3/4	450	30	CIR-4087	S	140193	S	275709	0.50
5/8	10	500	27	CIR-4103	S	244224	S	244232	0.64
5/8	10	750	40	CIR-4104	—	—	S	244240	0.64
5/8	10	1,000	54	CIR-4100	—	—	S	163838	0.64
5/8	10	1,500	81	CIR-4101	—	—	S	163854	0.64
5/8	10	2,000	108	CIR-4102	—	—	NS	163870	0.64
5/8	10-3/4	500	25	CIR-4107	S	275717	S	275725	0.68
5/8	10-3/4	1,700	85	CIR-4105	S	276496	S	276509	0.68
5/8	12	500	22	CIR-4125	S	244259	S	244267	0.75
5/8	12	900	40	CIR-4129	—	—	S	244275	0.75
5/8	12	1,000	45	CIR-4120	S	244283	S	163934	0.75
5/8	12	1,500	67	CIR-4121	S	244291	NS	280997	0.75
5/8	12	2,000	89	CIR-4122	—	—	S	163977	0.75
5/8	12-7/8	550	24	CIR-4128	NS	140206	NS	275733	0.81
5/8	14	3,700	139	CIR-4140	—	—	S	244304	0.88
5/8	15	600	22	CIR-4151	NS	140214	S	275741	0.95
5/8	15	750	27	CIR-4153	—	—	S	244312	0.95
5/8	15	1,500	53	CIR-4152	—	—	NS	281017	0.95
5/8	15	2,400	85	CIR-4150	—	—	S	278010	0.95
5/8	15	4,000	140	CIR-4154	—	—	S	244320	0.95
5/8	16	2,500	82	CIR-4160	—	—	NS	244339	1.02
5/8	16	4,500	148	CIR-4167	—	—	S	244347	1.02
5/8	17	800	26	CIR-4170	—	—	S	140222	1.10
5/8	18	1,500	44	CIR-4180	—	—	S	281025	1.18
5/8	18	2,600	76	CIR-4181	—	—	NS	281033	1.18
5/8	18	3,000	88	CIR-4182	—	—	S	244355	1.18
5/8	18	4,700	136	CIR-4184	—	—	NS	244363	1.18
5/8	19	950	27	CIR-4190	—	—	NS	140230	1.24
5/8	20	1,500	40	CIR-4200	—	—	S	244371	1.26
5/8	20	3,500	92	CIR-4203	—	—	S	244380	1.26
5/8	20	4,700	123	CIR-4205	—	—	S	244398	1.26
5/8	21	1,075	28	CIR-4211	—	—	S	140249	1.32
5/8	21	2,800	70	CIR-4210	—	—	S	278029	1.32
5/8	24	1,200	26	CIR-4241	—	—	NS	275750	1.51
5/8	24	2,000	44	CIR-4242	—	—	S	244400	1.51
5/8	24	3,000	65	CIR-4240	—	—	S	278037	1.51
5/8	24	4,700	102	CIR-4243	—	—	S	244419	1.51
5/8	30	2,000	35	CIR-4300	—	—	NS	140257	1.80
5/8	36	2,500	37	CIR-43611	—	—	S	140265	2.27
5/8	36	3,000	44	CIR-4361	—	—	S	244427	2.27
5/8	3								