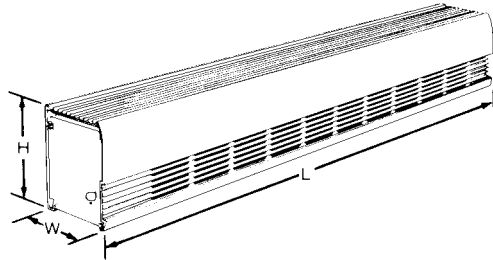




470 Beauty Spot Rd. E, Bennettsville, SC 29512

Architectural Sill-Height Convection Heaters

Type DBA and SHA



FILE # E37116

SUBMITTAL SHEET

DIMENSIONS

Type	Height	Width	Length
DBA	6"	3-5/8"	28" to 15'
SHA	7"	5-3/8"	28" to 12'

Minimum Mounting Height Above Floor

DBA & SHA Front Inlet	0"
DBA & SHA Bottom Inlet (100W/Ft.-250W/Ftr.)	1-3/4"
SHA Bottom Inlet (375W/Ft.-750W/Ft.)	3"

ARCHITECT / ENGINEER SUGGESTED SPECIFICATIONS

Furnish and install, where indicated on plans, SHA/DBA Series convector type heaters, suitable for continuous operation, as manufactured by QMark, A Division of Marley Engineered Products, Bennettsville, SC.

ENCLOSURE Shall be 12-gauge (.080" min.) aluminum extrusion (DBA) or 10-gauge (0.95" min.) aluminum extrusion (SHA). The one-piece back and bottom shall join to the one-piece top and front utilizing Qmark's Snap-Lock design (patent pending). Both inlet and outlet air grilles shall be punched pencil-proof slots negating the need for mesh under the grille.

SIZE Heaters shall be low profile (3-5/8" x 6" or 5-3/8" x 7") and available in length from 28 inches through 10 feet. Additionally, custom length cabinets (up to 15' for DBA, 12' for SHA) with single or multiple heat decks shall be furnished as specified.

HEATING LENGTHS AND VOLTAGES Heater lengths, voltages and wattage capacities shall be as indicated on the plans.

FINISH The top and front shall be finished with a baked enamel paint or anodized.

HEATING ELEMENTS The nickel-chromium heating element wire shall be encased in a steel sheath for maximum, trouble-free element life. Aluminum fins shall be pressure bonded to the steel sheath. Elements shall be centered anchored and shall float freely at each end through high-temperature Noryl bushings. The SHA shall utilize QMark's "Stair-Step" element arrangement (patent pending).

CONTROL SECTIONS Control sections, finished to match heaters, shall be furnished as an optional accessory for field installation of controls, or shall be used to house factory-installed controls as specified.

OPTION BUILT-IN CONTROLS Thermostats, power relay, low-voltage control relays, and disconnect switches, singly or in combination, may be specified for factory installation in heaters. Thermostats and disconnect switches are accessible through the grille.

PEDESTALS The heater shall be convertible for use as a self-standing unit with pedestal conversion kit. Pedestals shall be painted steel or anodized aluminum. Pedestals can either be mounted on or embedded in the floor surface and wiring or conduit brought through the pedestal during installation.

*QMark reserves the right to change specifications without prior notice.

DBA & SHA

Catalog Number	Length "L"	Watts per Ft.	Total Watts	Amperage			
				120V	208V	240V	277V
02100	28"	100	200	1.7	1.0	0.8	—
02125	28"	125	250	2.1	1.2	1.0	0.9
02150	28"	150	300	2.5	1.4	1.3	1.1
02188	28"	188	376	3.1	1.8	1.6	1.4
02250	28"	250	500	4.2	2.4	2.1	1.8
03100	3'	100	300	2.5	1.4	1.3	1.1
03125	3'	125	375	3.1	1.8	1.6	1.4
03150	3'	150	450	3.8	2.2	1.9	1.6
03188	3'	188	564	4.7	2.7	2.4	2.0
03250	3'	250	750	6.3	3.6	3.1	2.7
04100	4'	100	400	3.3	1.9	1.7	1.4
04125	4'	125	500	4.2	2.4	2.1	1.8
04150	4'	150	600	5.0	2.9	2.5	2.2
04188	4'	188	752	6.3	3.6	3.1	2.7
04250	4'	250	1000	8.3	4.8	4.2	3.6
05100	5'	100	500	4.2	2.4	2.1	1.8
05125	5'	125	625	5.2	3.0	2.6	2.3
05150	5'	150	750	6.3	3.6	3.1	2.7
05188	5'	188	940	7.8	4.5	3.9	3.4
05250	5'	250	1250	10.4	6.0	5.2	4.5
06100	6'	100	600	5.0	2.9	2.5	2.2
06125	6'	125	750	6.3	3.6	3.1	2.7
06150	6'	150	900	7.5	4.3	3.8	3.2
06188	6'	188	1128	9.4	5.4	4.7	4.1
06250	6'	250	1500	12.5	7.2	6.3	5.4
07100	7'	100	700	—	3.4	2.9	2.5
07125	7'	125	875	—	4.2	3.6	3.2
07150	7'	150	1050	—	5.0	4.4	3.8
07188	7'	188	1315	—	6.3	5.5	4.7
07250	7'	250	1750	—	8.4	7.3	6.3
08100	8'	100	800	—	3.8	3.3	2.9
08125	8'	125	1000	—	4.8	4.2	3.6
08150	8'	150	1200	—	5.8	5.0	4.3
08188	8'	188	1504	—	7.2	6.3	5.4
08250	8'	250	2000	—	9.6	8.3	7.2
09100	9'	100	900	—	4.3	3.8	3.2
09125	9'	125	1125	—	5.4	4.7	4.1
09150	9'	150	1350	—	6.5	5.6	4.9
09188	9'	188	1690	—	8.1	7.0	6.1
09250	9'	250	2250	—	10.8	9.4	8.1
10100	10'	100	1000	—	4.8	4.2	3.6
10125	10'	125	1250	—	6.0	5.2	4.5
10150	10'	150	1500	—	7.2	6.3	5.4
10188	10'	188	1880	—	9.0	7.8	6.8
10250	10'	250	2500	—	12.0	10.4	9.0

SHA 2- and 3-Element

Catalog Number	Length "L"	Watts per Ft.	Total Watts	Amperage				
				208V/1Ø	208V/3Ø	240/1Ø	240/3Ø	277V
02375	28"	375	750	3.6	—	3.1	—	2.7
02500	28"	500	1000	4.8	—	4.2	—	3.6
02600	28"	600	1200	5.8	4.2	5.0	3.6	4.3
02750*	28"	750	1500	7.2	4.2	6.3	3.6	5.4
03375	3'	375	1125	5.4	—	4.7	—	4.1
03500	3'	500	1500	7.2	—	6.3	—	5.4
03600	3'	600	1800	8.7	6.2	7.5	5.4	6.5
03750*	3'	750	2250	10.8	6.2	9.4	5.4	8.1
04375	4'	375	1500	7.2	—	6.3	—	5.4
04500	4'	500	2000	9.6	—	8.3	—	7.2
04600	4'	600	2400	11.5	8.3	10.0	7.2	8.7
04750*	4'	750	3000	14.4	8.3	12.5	7.2	10.8
05375	5'	375	1875	9.0	—	7.8	—	6.8
05500	5'	500	2500	12.0	—	10.4	—	9.0
05600	5'	600	3000	14.4	10.4	12.5	9.0	10.8
05750*	5'	750	3750	18.0	10.4	15.6	9.0	13.5
06375	6'	375	2250	10.8	—	9.4	—	8.1
06500	6'	500	3000	14.4	—	12.5	—	10.8
06600	6'	600	3600	17.3	12.5	15.0	10.8	13.0
06750*	6'	750	4500	21.6	12.5	18.8	10.8	16.2
07375	7'	375	2625	12.6	—	10.9	—	9.5
07500	7'	500	3500	16.8	—	14.6	—	12.6
07600	7'	600	4200	20.2	14.5	17.5	12.6	15.2
07750*	7'	750	5250	25.2	14.5	21.9	12.6	20.0
08375	8'	375	3000	14.4	—	12.5	—	10.8
08500	8'	500	4000	19.2	—	16.7	—	14.4
08600	8'	600	4800	23.1	16.7	20.0	14.4	17.3
08750*	8'	750	6000	28.8	16.7	25.0	14.4	21.7
09375	9'	375	3375	16.2	—	14.1	—	12.2
09500	9'	500	4500	21.6	—	18.8	—	16.2
09600	9'	600	5400	26.0	18.8	22.5	16.2	19.5
09750*	9'	750	6750	32.5	18.8	28.1	16.2	24.4
10375	10'	375	3750	18.0	—	15.6	—	13.5
10500	10'	500	5000	24.0	—	20.8	—	18.1
10600	10'	600	6000	28.8	20.8	25.0	18.0	21.7
10750*	10'	750	7500	36.1	20.8	31.3	18.0	27.1

*Bottom Inlet Only.

ZSS-QDBAO

(03-02)

OPTIONAL BUILT-IN CONTROLS

Suffix Addition to Basic Cat. No.	Optional Built-In Control	Ratings
DS	Disconnect Switch	Double-Pole, rated 20 amps @ 120-277 VAC. Single-phase heaters under 20A. (See Note A.)
T	Single-Pole Thermostat	Rated 25 amps @ 120-240 VAC and 22 amps @ 277 VAC. Pilot duty rating of 125 VA (all voltages). 60-120 degree F temperature range; adjustable through outlet grille — tamper-resistant. Not available on three-phase heaters (See Note B.)
2T	Two-Pole Thermostat	Rated 25 amps @ 120-240 VAC and 22 amps @ 277 VAC. Pilot duty rating of 125 VA (all voltages). 60-120 degree F temperature range; adjustable through outlet grille — tamper-resistant. Use 2ST on three-phase heaters. (See Note B.)
2ST	Two-Stage Thermostat	Rated 25 amps @ 120-240 VAC and 22 amps @ 277 VAC. Pilot duty rating of 125 VA (all voltages). 60-120 degree F temperature range; adjustable through outlet grille — tamper-resistant. Available on two or three-element heaters only.
PDT	Single-Pole Pilot duty Thermostat	Same control as T option except wired in the control circuit of one transformer relay or two or three power relays. (See Note C.)
2SPD	Two-Stage Pilot Duty Thermostat	Same control as 2ST option except wired in the control circuit of two transformer relays or two or three power relays. (See Note D.)
TR	Transformer Relay	Single-pole, low-voltage relay with built-in transformer (24 VAC control), rated 25 amps @ 120-240 VAC and 22 amps @ 277 VAC. For 1Ø heaters over 25A (22A @ 277V) 2 relays are required. For 3Ø (de-energizing) a transformer relay and 2 power relays or 3 transformer relays are required.
PR	Power Relay	Single-pole magnetic relay, rated 25 amps @ 120-277 VAC. Specify control voltage. Two relays are required on single-phase heaters over 25 amps and on all three-phase heaters. Three relays can be used on 3Ø heating for total disconnect. Two relays are available for two-stage on two or three-element heaters only. Three power relays are available for three-stage on three-element heaters only.
PE	Pneumatic / Electric Switch	Pressure set-point @ 10PSIG adjustable to 30 PSIG. Can be set to "make" or "break" on pressure drop. Rated 25 amps @ 120-277 VAC. (See Note E.)

NOTES:

A. For 1Ø loads over 20A and all 3 Ø loads, specify 2 disconnect switches.

B. This control option is not available on single-phase heaters over 25 amps (22 amps on 277 VAC). In combination with the disconnect switch option use the 2ST thermostat option on heaters over 20 amps.

C. A second transformer relay can be sequenced off the first transformer relay in the same heater. Up to 30 power relays in different heaters can be controlled by one single-stage pilot duty thermostat.

D. Up to 30 power relays in different heaters can be controlled by each stage of a two-stage pilot duty thermostat.

E. Fits SHA only. For DBA, PE will be installed in 4-1/2" section.

CONTROL COMBINATIONS

	DBA			
	No Power Controls	Power Relay (-PR)	Transformer Relay (-TR)	Pneumatic/Electric Switch (-PE)
No Thermostat or Disconnect Switch	X	X	X	5
1-Pole T-Stat (-T)	X	X	X	5
2-Pole T-Stat (-2T)	X	X	X	5
2-Stage T-Stat (-2ST)				
Pilot Duty T-Stat (-PDT) See Note 2		X	X	
2-Stage Pilot Duty T-Stat (-2SPD) See Note 2				
Disconnect Switch (-DS) See Note 4	X	X	X	5
1-Pole T-Stat & Disconnect Switch	X	X	X	5
2-Pole T-Stat & Disconnect Switch	X	X	X	5
2-Stage T-Stat & Disconnect Switch				
Pilot Duty T-Stat & Disconnect Switch		X	X	
2-Stage Pilot Duty T-Stat & Disconnect Switch				

	SHA						
	No Power Controls	Power Relay (-PR)	2 Power Relays (-2PR)	3 Power Relays (-3PR)	Transformer Relay (-TR)	2 Transformer Relays (-2TR)	Pneumatic/Electric Switch (-PE)
	X	X	X	X	X	X	X
	X	X			X		X
	X	X	X	X	X	X	X
	X	X	X	X	X	3	X
		X	X			3	
			X	X		3	
	X	X	X	X	X	3	X
	X	X			X		X
	X	X	X	X	X	3	X
		X	X			3	

NOTES:

1. Normal mounting configuration is a thermostat and disconnect switch in left junction box; power relay, transformer relay, and pneumatic/electric switch in right junction box.

2. When used with power relays or transformer relays, pilot duty thermostats will be wired into the coil circuit of the power relay or the 24V side of the

transformer relay. The line voltage thermostats will be wired into the power circuit of the heater.

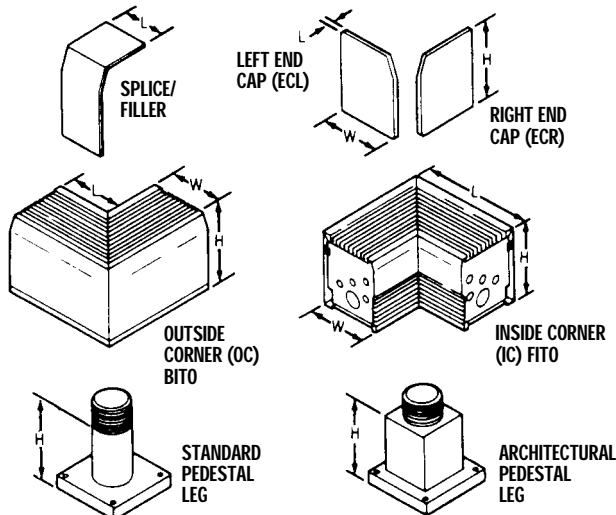
3. When using two transformer relays with any additional controls (built-in thermostat or disconnect switch), please consult factory.

4. For three-phase units, specify two disconnect switches.

5. Installed in separate 4-1/2" section.

ACCESSORIES

Catalog No.	DESCRIPTION
DBA-DR-F DBA-DR-B	Duplex Receptacle built into 4-1/2" wide, 3-5/8" by 6" sections. 15 amps @ 125 VAC. (NEMA 5-15R)
DBA-PE-F DBA-PE-B	Pneumatic/Electric Switch built into a 4-1/2" wide, 3-5/8" x 6" section.
SHA-DF-F SHA-DR-B	Duplex Receptacle built into 41/2" wide, 53/8" x 7" sections. 15 amps @ 125 VAC. (NEMA 5-15R)
DBA-BS1-F DBA-BS2-F etc.	Front Inlet Blank Sections 3-5/8" x 6", 1', 28", 3', 4', 5', 6', 7', 8', 9' and 10' lengths.
DBA-BS1-B DBA-BS2-B etc.	Bottom Inlet Blank Sections 3-5/8" X 6"; 1', 28", 3', 4', 5', 6', 7', 8', 9' and 10' Lengths
DBA-ECL DBA-ECR DBA-ECLS DBA-ECRS	Left End Cap, 3-5/8" x 6" Right End Cap, 3-5/8" x 6". Left End Cap w/screws - 3-5/8" x 6" Right End Cap w/screws - 3-5/8" x 6"
DBA-SP	3/4" wide strip to cover joint when installing continuous runs.
DBA-IC-F DBA-OC-F DBA-IC-B DBA-OC-B	Inside Corner — Front Inlet, 3-5/8" x 6" Outside Corner — Front Inlet, 3-5/8" x 6". Inside Corner — Bottom Inlet, 3-5/8" x 6". Outside Corner — Bottom Inlet, 3-5/8" x 6".
DBA-135ICF DBA-135ICB DBA-135OCF DBA-135OCB	135° Ins. Cnr-Fnt In 3-5/8" x 6". 135° Ins. Cnr-Bot In 3-5/8" x 6". 135° Out Cnr-Fnt In 3-5/8" x 6". 135° Out Cnr-Bot In 3-5/8" x 6".
DBA-FL-3, -6, -9, -12, -18	Filler Sections for ASL3; 3", 6", 9", 12" and 18"
SHA-BS1-F SHA-BS2-F etc.	Front Inlet Blank Sections, 5-3/8" x 7"; 1', 28", 3', 4', 5', 6', 7', 8', 9' and 10' lengths.
SHA-BS1-B SHA-BS2-B etc.	Bottom Inlet Blank Sections, 5-3/8" x 7"; 1', 28", 3', 4', 5', 6', 7', 8', 9' and 10' lengths.
SHA-ECL SHA-ECR SHA-ECLS SHA-ECRS	Left End Cap, 5-3/8" x 7". Right End Cap, 5-3/8" x 7". Left End Cap w/screws - 5-3/8" x 7". Right End Cap w/screws - 5-3/8" x 7".
SHA-SP	3/4" wide strip to cover joint when installing continuous runs.
SHA-IC-F SHA-OC-F SHA-IC-B SHA-OC-B	Inside corner — Front Inlet, 5-3/8" x 7". Outside Corner — Front Inlet, 5-3/8" x 7". Inside Corner — Bottom Inlet, 5-3/8" x 7". Outside — Bottom Inlet, 5-3/8" x 7".
SHA-135ICF SHA-135ICB SHA-135OCF SHA-135OCB	135° Ins. Cnr-Fnt In 5-3/8" x 7". 135° Ins. Cnr-Bot In 5-3/8", 7". 135° Out Cnr-Fnt In 5-3/8" x 7". 135° Out Cnr-Bot In 5-3/8" x 7".
SHA-FL-3, -6, -9, -12, 18	Filler Sections for ASL5; 3", 6", 9", 12" and 18"
PK3-S	Standard Pedestal Kit (steel, painted black) to field convert DBA to pedestal heater sized for 1-1/4" conduit.
PK3-A	Architectural Pedestal Kit (aluminum) to field convert DBA to pedestal heater sized for 1-1/4" conduit.
PK5-S	Standard Pedestal Kit (steel, painted black) to field convert SHA to pedestal heater sized for 1-1/4" conduit.
PK5-A	Architectural Pedestal Kit (aluminum) to field convert SHA to pedestal heater sized for 1-1/4" conduit.
SO1A SO2A	Stand-Off Bkt. for DBA. Stand-Off Bkt. for SHA.



CONTROL SECTIONS

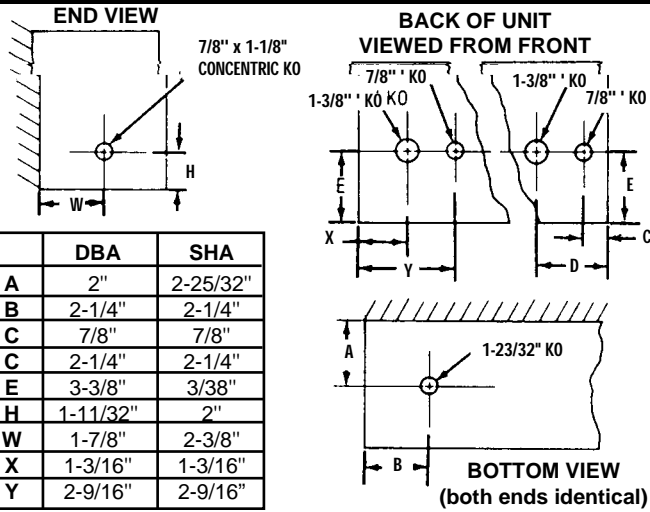
Catalog No.	DESCRIPTION
DBA-BCS-F SHA-BCS-F	Control Section, Front Inlet, 3-5/8" x 6", 28" long.
DBA-BCS-B SHA-BCS-B	Control Section, Bottom Inlet, 3-5/8" x 6", 28" long.
1CB-2P30	Control Section, Bottom Inlet, 5-3/8" x 7", 28" long. 1—Two-Pole Circuit Breaker rated 30 amps @ 208, 240, 277 VAC.
1CB-2P60	1—Two-Pole Circuit Breaker rated 60 amps @ 208, 240, 277 VAC.
1CP-3P30	1—Three-Pole Circuit Breaker rated 30 amps @ 208, 240, 277 VAC.
1CB-3P60	1—Three-Pole Circuit Breaker rated 60 amps @ 208, 240, 277 VAC.
2CP-2P30	2—Two-Pole Circuit Breaker rated 30 amps @ 208, 240, 277 VAC.
2CP-2P60	2—Two-Pole Circuit Breaker rated 60 amps @ 208, 240, 277 VAC.
2CP-3P30	2—Three-Pole Circuit Breaker rated 30 amps @ 208, 240, 277 VAC.
2CP-3P60	2—Three-Pole Circuit Breaker rated 60 amps @ 208, 240, 277 VAC.
M1-30	1—Single-Pole Mercury Relay rated 30 amps @ 208, 240, 277 VAC.
M1-60	1—Single-Pole Mercury Relay rated 60 amps @ 208, 240, 277 VAC.
M2-30	2—Single-Pole Mercury Relay rated 30 amps @ 208, 240, 277 VAC.
M2-60	2—Single-Pole Mercury Relay rated 60 amps @ 208, 240, 277 VAC.
M3-30	3—Single-Pole Mercury Relay rated 30 amps @ 208, 240, 277 VAC.
M3-60	3—Single-Pole Mercury Relay rated 60 amps @ 208, 240, 277 VAC.
M4-30	4—Single-Pole Mercury Relay rated 30 amps @ 208, 240, 277 VAC.
M4-60	4—Single-Pole Mercury Relay rated 60 amps @ 208, 240, 277 VAC.
M6-30	6—Single-Pole Mercury Relay rated 30 amps @ 208, 240, 277 VAC.
M6-60	6—Single-Pole Mercury Relay rated 60 amps @ 208, 240, 277 VAC.
TR24	Low-Voltage Transformer, 24V Secondary.
-SCR	Silicon Controlled Rectifier temperature regulating device for infinite control. Built-into control section. 16.6A @ 120, 208, 240 VAC; 144A @ 277 VAC. Requires -701-1 thermostat. Specify voltage when ordering.
-701-1	Line Voltage Thermistor thermostat for use with -SCR controller.

ACCESSORY DIMENSIONS

Catalog No.	Length*	Height	Width
DBA-IC**, DBA-135IC**	8-1/2"	6"	3-5/8"
DBA-OC**, DBA-135OC**	5"	6"	3-5/8"
DBA-ECL / ECLS	1/8"	6"	3-5/8"
DBA-ECR / ECRS	1/8"	6"	3-5/8"
DBA-SP	0" - 1/4"	6"	3-5/8"
DBA-FL3	0" - 3"		
DBA-FL6	3" - 6"		
DBA-FL9	6" - 9"	6"	3-5/8"
DBA-FL12	9" - 12"		
DBA-FL18	15" - 18"		
SHA-IC**, SHA-135IC**	10"	7"	5-3/8"
SHA-OC**, SHA-135OC**	5"	7"	5-3/8"
SHA-ECL / ECLS	1/8"	7"	5-3/8"
SHA-ECR / ECRS	1/8"	7"	5-3/8"
SHA-SP	0" x 1/4"	7"	5-3/8"
ASHA-FL3	0" - 3"		
SHA-FL6	3" - 6"		
SHA-F9	6" - 9"	7"	5-3/8"
SHA-FL12	9" - 12"		
SHA-FL18	15" - 18"		
PK3S	0		—
PK3A	0		—
PK5S	0		—
PK5A	0		—

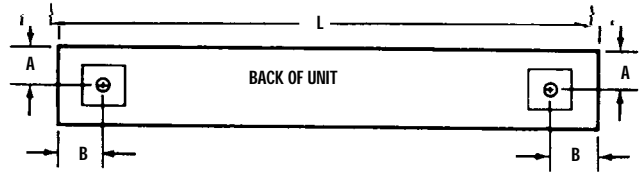
*"L" dimension is the additional length the accessory adds to the total installation length.
**Add suffix "B" for bottom inlet, "F" for front inlet.

KNOCKOUTS



	DBA	SHA
A	2"	2-25/32"
B	2-1/4"	2-1/4"
C	7/8"	7/8"
C	2-1/4"	2-1/4"
E	3-3/8"	3/38"
H	1-11/32"	2"
W	1-7/8"	2-3/8"
X	1-3/16"	1-3/16"
Y	2-9/16"	2-9/16"

PEDESTAL PLACEMENT



Model	A	B	L
DBA	2"	2-1/4"	28" - 10"
SHA	2-25/32"	2-1/4"	28" - 10"

NOTE: On units longer than 10', three pedestals are required. Consult factory for placement.

ITEM	QTY.	CATALOG NUMBER	TAG	LENGTH	NO. OF ELEMENTS	WATTS	VOLTS	Ø	AMPS	BUILT-IN CONTROLS

Accessories and Controls

ITEM	QTY.	CAT. NO.	TAG	DESCRIPTION

SUBMITTED BY:	DATE

APPROVED BY:	DATE

 **Marley**
 Engineered Products
 470 Beauty Spot Rd. E.
 Bennettsville, SC 29512