

# BEACON/MORRIS "BM" SERIES GAS FIRED PROPELLER UNIT HEATER

BEPS-11

## DESCRIPTION

The Beacon/Morris High Efficiency Unit Heaters achieve 80% thermal efficiency and annual fuel savings of 20 to 25% over conventional gravity vented heaters.

Heated air no longer escapes through the draft diverter opening during the off-cycle. Energy saving spark ignition reduces gas losses. The pilot only operates when required.

Horizontal power venting allows side wall venting, smaller openings and single walled vent pipe, reducing heat loss. Higher efficiencies can reduce equipment and material cost as well as installation time.



## 80% THERMAL EFFICIENCY

The designs are certified by ETL International as providing a minimum of 80% combustion efficiency. Approved for use in Canada.

## STANDARD FEATURES

- Spark Ignited Intermittent Safety Pilot With Electronic Flame Supervision
- Power Venter
- 20-gauge Aluminized Steel Heat Exchanger.
- Certified for natural and propane gases.
- Aluminized Steel Burners with Stainless "Burner Shade Port Protector"
- 115 Volt Supply Voltage
- 115 Volt Motors, All Sizes
- High Limit Switch
- Burner Air Shutters, All Sizes
- Transformer, 115/24 Volt
- Combustion Air Pressure Switch
- Redundant Single Stage Combination Gas Valve
- Bottom Access Panel, All Sizes
- Full Protection Fan Guard
- Fan Time Delay-Relay
- Horizontal Individually Adjustable Louvers
- Two Point Hanger Rod Suspension, All Sizes
- 20-gauge Steel Cabinet with Gray Enamel Finish
- Units are factory tested for operation of motor, control and flame.



## OPTIONAL EXTRAS

OPT. NO.	DESCRIPTION
—	Stainless Steel Heat Exchangers (409 or 321)
S3	409 Stainless Steel Flue Collectors
S1	409 Stainless Steel Burners
Q6	Vertical Louvers
P6	Summer - Winter Toggle Switch
G3	Low voltage room thermostat with Integral Switch for summer fan operation with the Beacon/Morris logo.
Q2, Q3, Q4	30°, 60° & 90° Downward Discharge Nozzle.
Q1	Y-Splitter Discharge Nozzle.
M7	Two to Four Point Hanger Suspension Kit.
M6	OSHA type fan guards



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PROJECT: \_\_\_\_\_

UNIT TAG: \_\_\_\_\_

# BMEF – PERFORMANCE AND DIMENSIONAL DATA

Capacity (MBH)	100	125	150	175	200	225	250	300	350	400
<b>PERFORMANCE DATA †</b>										
Input BTU/Hr	100,000	125,000	150,000	175,000	200,000	225,000	250,000	300,000	350,000	400,000
(kW)	(29.3)	(36.6)	(43.9)	(51.2)	(58.6)	(65.9)	(73.2)	(87.8)	(102.5)	(117.1)
Output BTU/Hr	80,000	100,000	120,000	140,000	160,000	180,000	200,000	240,000	280,000	320,000
(kW)	(23.4)	(29.3)	(35.1)	(41.0)	(46.9)	(52.7)	(58.6)	(70.3)	(82.0)	(93.7)
Thermal Efficiency (%)	80	80	80	80	80	80	80	80	80	80
Free Air Delivery CFM	1,480	1,650	2,200	2,530	2,640	2,700	3,100	4,400	5,000	5,300
(cu. m/s)	(0.699)	(0.779)	(1.038)	(1.194)	(1.246)	(1.274)	(1.463)	(2.077)	(2.360)	(2.502)
Air Temperature Rise °F	50	56	50	51	56	61	60	50	52	56
(°C)	(28)	(31)	(28)	(28)	(31)	(34)	(33)	(28)	(29)	(31)
Outlet Velocity FPM	775	910	1,045	1,070	1,010	950	980	1,100	1,150	1,050
(m/s)	(3.94)	(4.62)	(5.31)	(5.44)	(5.13)	(4.83)	(4.98)	(5.59)	(5.84)	(5.33)
Sound Ratings (See Page 18)	II	II	II	III	III	III	IV	IV	IV	IV
Full Load Amps at 115V (O.D.P.)	4.5	6.1	6.6	7.7	7.7	7.7	7.7	11.3	13.5	13.5
<b>MOTOR DATA</b>										
Motor HP	1/20	1/10	1/4	1/3	1/3	1/3	1/3	1/4	1/3	1/3
Motor (kW)	(0.037)	(0.075)	(0.186)	(0.249)	(0.249)	(0.249)	(0.249)	(0.186)	(0.249)	(0.249)
Motor Type (O.D.P.)	SP	SP	PSC	PSC	PSC	PSC	PSC	PSC	PSC	PSC
RPM	1,050	1,050	1,140	1,140	1,140	1,140	1,140	1,140	1,140	1,140
Amps @ 115V (O.D.P.)	2.6	4.2	4.7	5.8	5.8	5.8	5.8	9.4	11.6	11.6
<b>DIMENSIONAL DATA in. (mm)</b>										
"A" Height to Top of Unit	31-1/4 (794)	31-1/4 (794)	36-1/4 (921)	36-1/4 (921)	36-1/4 (921)	36-1/4 (921)	36-1/4 (921)	36-1/4 (921)	36-1/4 (921)	36-1/4 (921)
"B" Width of Unit 17-7/8/20-5/8	20-5/8 (454)	23-3/8 (524)	26-1/8 (524)	28-7/8 (594)	31-5/8 (664)	37-1/8 (733)	42-5/8 (803)	48-1/8 (943)	50-1/8 (1083)	50-1/8 (1222)
"C" Height to Top of Hanger	34-1/8 (867)	34-1/8 (867)	39-1/8 (994)	39-1/8 (994)	39-1/8 (994)	39-1/8 (994)	39-1/8 (994)	39-1/8 (994)	39-1/8 (994)	39-1/8 (994)
"D" Depth to Rear of Housing	37-1/2 (952)	37-1/2 (952)	37-1/2 (952)	37-1/2 (952)	37-1/2 (952)	37-1/2 (952)	37-1/2 (952)	37-1/2 (952)	37-1/2 (952)	37-1/2 (952)
"E" Hanging Distance Width	14-1/2 (368)	17-1/4 (438)	17-1/4 (438)	20 (508)	22-3/4 (578)	25-1/2 (648)	28-1/4 (718)	33-3/4 (857)	39-1/4 (997)	44-3/4 (1137)
"F" Discharge Opening Width	15-3/8 (391)	18-1/8 (460)	18-1/8 (460)	20-7/8 (530)	23-5/8 (600)	26-3/8 (670)	29-1/8 (740)	34-5/8 (879)	40-1/8 (1019)	45-5/8 (1159)
"G" Depth to Unit Side Jacket	26-3/4 (679)	26-3/4 (679)	26-3/4 (679)	26-3/4 (679)	26-3/4 (679)	26-3/4 (679)	26-3/4 (679)	26-3/4 (679)	26-3/4 (679)	26-3/4 (679)
"H" Discharge Opening Height	18 (457)	18 (457)	18 (457)	18 (457)	18 (457)	18 (457)	18 (457)	18 (457)	18 (457)	18 (457)
"J" to Centerline of Flue	5-7/8 (149)	7-1/4 (184)	7-1/4 (184)	8-5/8 (219)	10 (254)	11-1/4 (286)	12-3/4 (324)	15-1/2 (394)	18-1/4 (464)	21 (533)
"K" Depth to Centerline of Flue	30-5/8 (778)	30-5/8 (778)	30-5/8 (778)	30-5/8 (778)	30-5/8 (778)	30-5/8 (778)	30-5/8 (778)	30-5/8 (778)	30-5/8 (778)	30-5/8 (778)
"L" Hanger Location	16-1/4 (413)	16-3/4 (425)	16-3/8 (416)	16-3/8 (416)	16-3/8 (416)	16-3/4 (425)	16-3/4 (425)	16-3/4 (425)	16-3/4 (425)	16-3/4 (425)
Flue Size Dia.-in. *	4	4	4	4	5	5	5	6	6	6
(Dia.-mm)	(102)	(102)	(102)	(102)	(127)	(127)	(127)	(152)	(152)	(152)
Fan Diameter-in.	14	16	16	18	18	18	18	(2) 16	(2) 18	(2) 18
Gas Inlet-Natural Gas-in.	1/2	1/2	1/2	1/2	1/2	3/4	3/4	3/4	3/4	3/4
Gas Inlet-LP Gas-in.	1/2	1/2	1/2	1/2	1/2	← 1/2 OR 3/4 →		1/2	1/2	1/2
Approx. Shipping Wt lb.	174	197	219	238	249	275	305	350	414	461
(kg)	(79)	(89)	(99)	(108)	(113)	(125)	(138)	(159)	(188)	(209)

† Ratings shown are for unit installations at elevations between 0 and 2000 ft. (610m) above sea level. For unit installations in USA above 2000 ft. (610m), the unit input must be derated 4% for each 1000 ft. (305m) above sea level; refer to local codes, or in absence of local codes, refer to the latest edition of the National Fuel Gas Code, ANSI Standard Z223.1 (N.F.P.A. No. 54). For installations in Canada, any references to deration at altitudes in excess of 2000 ft. (610m) are to be ignored. At altitudes of 2000 to 4500 ft. (610 to 1372m), the unit must be derated to 90% of the normal altitude rating, and be so marked in accordance with the ETL certification.

LEGEND: SP = SHADED POLE  
PSC = PERMANENT SPLIT CAPACITOR  
O.D.P. = OPEN DRIP PROOF

