

Number One
Air Conditioning
Maker



Product Application Data 38HQ

Division of
Carrier Corporation

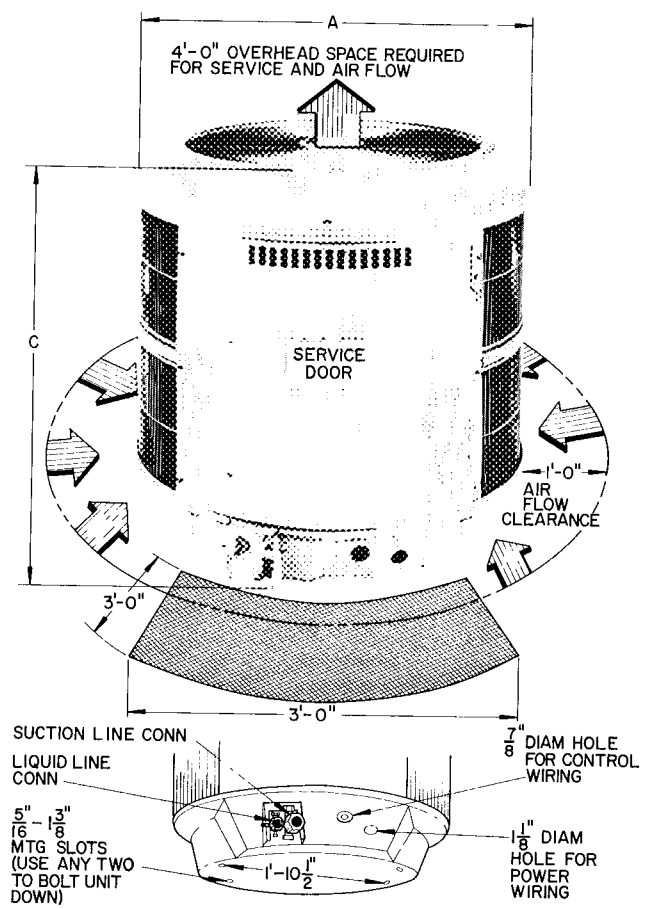
Carrier Parkway • Syracuse N.Y. 13201

This Product Application Data section is for the new 38HQ Weathermaster III split heat pump models. Data is included on the 38HQ940 and 960 outdoor fan coil sections and the 38HQ127, 134, 140 and 146 indoor compressor sections.

Physical data and dimensions (OUTDOOR FAN COIL SECTION)

UNIT	38HQ940	38HQ960
OPER WT (lb)	107	125
REFRIGERANT*	22	
Refrig. Control	AccuRater™	
FAN	Propeller-Type, Direct Drive	
Air Discharge	Vertical	
Air Qty. (cfm)	3100	3600
Motor Hp	1/5	1/4
Motor Rpm	1015	1080
COIL (Type)		
Fins/in.	19	17
Face Area (sq ft)	10.5	15.3
Rows	2.0	2.0
DIM. (ft.-in.)		
Diameter A	2-5 $\frac{1}{4}$	2-5 $\frac{1}{4}$
Height C	2-8	3-8
CONN. (in.)	Compatible Fitting Vapor and Flare (Liquid)	
Vapor Line	3/4	
Liquid Line	3/8	

* The 38HQ contain correct operating charge for complete system (except 38HQ940/38HQ134 combination) when connected to 4OFS/28MQ or 4OAG indoor units with 25 ft. or less of tubing of recommended diameter. Charge adjustment may be required on other systems. The 38HQ940/38HQ134 combination requires an additional .9 lb. of R-22.



Certified dimension drawings available on request

Tab 12	1	4
Book	5a	5a

12/76

PC 101

Form 38HQ-1PAD New

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Printed in U.S.A.

Catalog No. 513-811

Physical Data and Dimensions (cont.) (Indoor Compressor Section)

UNIT	38HQ127	38HQ134	38HQ140	38HQ146
OPERATING WT (lb)	111	117	141	142
REFRIGERANT	22			
COMPRESSOR	Hermetic			
Cylinders	2			
Rpm (60-Hz)	3500			
DIMENSIONS (ft.-in.)				
Length A	1 - 2 3/32			
Width B	1 - 4 3/16			
Height C	1 - 11 1/8 (Add 2 1/2 in. for Refrigerant Fittings)			
CONNECTIONS (in ODF)	Compatible Fittings			
Vapor Lines (2)*	3/4			

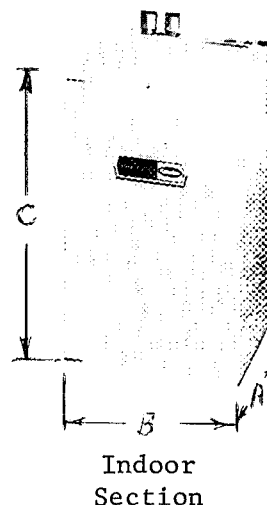
* RECOMMENDED REFRIGERANT LINE SIZES

INDOOR COMPR SECTION	38HQ127	38HQ134	38HQ140	38HQ146
OUTDOOR FAN COIL SECTION	38HQ940	38HQ940	38HQ960	38HQ960
VAPOR (in. OD)	3/4	3/4	7/8	1 1/8
LIQUID (in. OD)			3/8	

The 38HQ146/38HQ960 system requires 1-1/8 in. vapor line for optimum performance. When using 7/8-in. vapor line, deduct 1-1/2% of rated capacity for every 25 ft. of run. The 38HQ146 is factory supplied with four 3/4 x 1-1/8 in. connection adapters (field installed) for field supplied 1-1/8 in. system vapor line.

NOTES:

- Maximum allowable length of interconnecting tubing is 50 feet.
- Maximum allowable vertical separation of indoor unit above or below outdoor unit is 50 feet.



Performance data

2+ to 4 tons

COMBINATION RATING INDEX

OUTDOOR UNIT	INDOOR UNIT		ARI STANDARD RATINGS							TABLE NO.
			Cooling		Hi-Temp Heat		Lo-Temp Heat			
	Compr.	Fan Coil	CFM	TC	EER	TH	COP	TH	COP	
38HQ940	38HQL27	40AQ030		27.5	7.9	31.0	2.8	17.0	1.9	1
38HQ940	38HQL34	40AQ036		33.5	7.8	37.5	2.8	21.0	2.1	2
	38HQL34	40FSL60/28MQ036								
38HQ960	38HQL40	40FSL60/28MQ042		40.0	7.8	45.0	2.9	24.0	2.1	3
38HQ960	38HQL46	40FS200/28MQ048		46.0	7.9	51.0	2.9	28.0	2.1	4

C.O.P. — Coefficient of performance = $\frac{\text{Btuh output}}{\text{Btuh input}}$ or

$\frac{\text{Btuh output}}{\text{Unit wattage} \times 3.413}$ Based on ARI conditions

EER — Energy Efficiency Ratio = $\frac{\text{Btuh}}{\text{Unit wattage}}$ Based on ARI conditions

TC — Total Capacity (1000 Btuh)

Rated in accordance with ARI Standards 240-75 and 270-75



Ratings are net values, reflecting the effects of circulating fan heat. Supplementary electric heat is not included. Ratings are based on:

Cooling Standard: 80 F db, 67 F wb indoor entering air temperature and 95 F db air entering outdoor unit

Hi-Temp Heating Standard: 70 F db indoor entering air temperature and 47 F db, 43 F wb air entering outdoor unit

Lo-Temp Heating Standard: 70 F db indoor entering air temperature and 17 F db, 15 F wb air entering outdoor unit

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1.

38HQ940/38HQL27 plus 40AQ030

Temp (F) Air Ent Outdoor Unit		Air Ent Indoor Unit - Cfm/BF								
		917/.12			1031/.13			1145/.14		
		Indoor Unit Ent Air Temp - Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC	29.2	28.0	26.0	29.4	27.9	26.5	29.4	27.9	26.8
	SHC	14.9	20.1	24.4	15.4	20.7	25.5	15.6	21.4	26.2
	KW	3.29	3.22	3.10	3.35	3.27	3.18	3.40	3.32	3.26
85	TC	28.7	27.2	25.0	29.0	27.5	25.6	29.0	27.6	26.1
	SHC	15.0	20.0	23.9	15.4	21.0	25.0	15.8	21.9	25.7
	KW	3.48	3.39	3.26	3.55	3.50	3.35	3.60	3.52	3.43
95	TC	28.2	26.4	24.3	28.5	26.7	24.9	28.5	26.9	25.4
	SHC	14.8	19.8	23.4	15.3	20.8	24.4	15.7	21.7	25.1
	KW	3.57	3.46	3.33	3.64	3.53	3.42	3.70	3.60	3.51
105	TC	27.6	25.7	23.6	27.9	26.0	24.2	28.0	26.2	24.7
	SHC	14.7	19.5	22.9	15.2	20.6	23.8	15.7	21.6	24.5
	KW	3.67	3.54	3.40	3.74	3.61	3.49	3.80	3.68	3.59
115	TC	26.5	24.2	22.1	26.7	24.6	22.7	27.0	24.8	23.3
	SHC	14.4	19.1	21.9	15.1	20.3	22.7	15.6	21.2	23.2
	KW	3.86	3.69	3.54	3.92	3.77	3.64	4.00	3.84	3.74

2.

38HQ940/38HQL34 plus 40AQ036 or 40FSL60/28MQ036

Temp (F) Air Ent Outdoor Unit		Air Ent Indoor Unit - Cfm/BF								
		1115/.11			1275/.13			1400/.14		
		Indoor Unit Ent Air Temp - Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC	37.4	34.7	31.2	37.8	35.2	32.2	37.8	35.4	32.7
	SHC	19.1	24.8	29.9	19.8	26.4	31.1	20.2	27.3	32.2
	KW	4.18	4.05	3.89	4.27	4.15	4.00	4.33	4.21	4.06
85	TC	35.6	33.0	30.0	35.7	33.5	30.8	35.6	33.5	31.4
	SHC	18.4	24.1	28.8	19.0	25.5	30.1	19.3	26.2	31.1
	KW	4.40	4.23	4.11	4.48	4.30	4.23	4.53	4.43	4.31
95	TC	34.7	32.1	29.2	34.9	32.5	30.0	34.9	32.6	30.6
	SHC	18.1	23.8	28.0	18.7	25.1	29.5	19.1	26.0	30.4
	KW	4.52	4.38	4.23	4.61	4.48	4.34	4.66	4.54	4.43
105	TC	33.8	31.1	28.5	34.2	31.5	29.1	34.1	31.6	29.7
	SHC	17.8	23.4	27.3	18.5	24.8	28.9	18.9	25.8	29.7
	KW	4.64	4.49	4.33	4.74	4.59	4.45	4.79	4.85	4.54
115	TC	32.0	29.2	26.6	32.6	29.6	27.5	32.6	29.8	28.4
	SHC	17.3	22.6	26.4	18.1	24.1	27.3	18.6	25.3	28.2
	KW	4.88	4.71	4.54	4.99	4.81	4.67	5.05	4.88	4.77

BF - Bypass Factor

SHC - Sensible Heat Capacity
(1000 Btuh)

Ewb - Entering Wet-Bulb

KW - Compr Motor Power Input

TC - Total Cap (1000 Btuh)

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3.

38HQ960/38HQ140 plus 40FS160/28MQ042

Temp (F) Air Ent Outdoor Unit		Air Ent Indoor Unit - Cfm/BF								
		1333/.11			1500/.12			1667/.13		
		Indoor Unit Ent Air Temp - Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC	46.5	43.4	40.3	46.8	44.0	41.1	46.6	44.2	41.9
	SHC	23.4	29.6	36.2	23.8	30.9	38.1	24.0	31.7	39.7
	KW	4.55	4.43	4.33	4.63	4.59	4.43	4.69	4.61	4.52
85	TC	44.6	41.5	38.1	44.8	42.0	38.9	44.7	42.3	39.7
	SHC	22.7	29.1	35.1	23.1	30.4	36.9	23.4	31.5	38.4
	KW	4.86	4.73	4.57	4.93	4.82	4.68	5.00	4.90	4.79
95	TC	42.6	39.6	35.8	42.8	40.0	36.7	42.7	40.4	37.5
	SHC	22.0	28.6	34.0	22.5	29.9	35.7	22.9	31.3	37.0
	KW	5.16	5.01	4.81	5.24	5.10	4.94	5.30	5.20	5.05
105	TC	40.3	37.0	33.6	40.5	37.4	34.4	40.3	37.8	35.3
	SHC	21.1	27.5	32.5	21.8	28.9	34.0	22.1	30.3	35.1
	KW	5.44	5.25	5.06	5.52	5.35	5.18	5.58	5.45	5.31
115	TC	38.0	34.5	31.4	38.1	34.9	32.2	37.8	35.2	33.0
	SHC	20.3	26.5	31.1	21.0	28.0	32.0	21.2	29.4	32.9
	KW	5.72	5.49	5.30	5.80	5.59	5.43	5.86	5.70	5.56

4.

38HQ960/38HQ146 plus 40FS200/28MQ048

Temp (F) Air Ent Outdoor Unit		Air Ent Indoor Unit - Cfm/BF								
		1533/.13			1725/.14			1917/.15		
		Indoor Unit Ent Air Temp - Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC	52.8	50.0	47.1	53.5	50.6	47.8	53.1	50.1	48.2
	SHC	25.8	33.3	41.8	26.3	34.3	42.9	26.8	34.5	44.8
	KW	5.20	5.07	4.96	5.30	5.18	5.07	5.35	5.24	5.14
85	TC	50.6	47.8	44.9	51.4	48.4	45.6	51.1	48.3	46.2
	SHC	25.1	32.6	40.2	25.9	33.6	41.5	26.2	34.2	42.5
	KW	5.50	5.38	5.24	5.62	5.48	5.35	5.68	5.56	5.43
95	TC	48.3	45.6	42.7	49.1	46.0	43.5	48.7	46.4	44.1
	SHC	24.4	31.8	39.4	24.5	32.9	40.1	25.6	33.9	41.0
	KW	5.81	5.68	5.53	5.95	5.80	5.64	6.01	5.89	5.73
105	TC	45.9	43.3	40.4	46.8	43.8	41.2	46.2	44.2	42.0
	SHC	23.0	31.1	37.6	24.0	32.3	38.8	24.1	33.4	39.4
	KW	6.11	5.97	5.81	6.28	6.08	5.93	6.34	6.19	6.03
115	TC	43.5	40.9	38.2	44.4	41.5	39.0	43.7	42.0	39.8
	SHC	22.5	30.4	36.6	23.3	31.7	36.8	23.4	33.0	37.3
	KW	6.40	6.25	6.09	6.58	6.38	6.21	6.65	6.50	6.32

INTEGRATED HEATING CAPACITIES*

OUTDOOR UNIT	INDOOR UNIT	TEMPERATURE OF AIR ENTERING OUTDOOR UNIT (Edb)											
		-10		0		10		17		20		30	
		Cap.	KW	Cap.	KW	Cap.	KW	Cap.	KW	Cap.	KW	Cap.	KW
38HQ940	38HQL27/40AQ030	7.5	2.0	11.0	2.3	14.5	2.5	17.0	2.6	18.0	2.6	22.0	2.8
38HQ940	38HQL34/40AQ036 or 38HQL34/40FSL60/ 28MQ036	10.0	2.3	14.0	2.6	18.0	2.9	21.0	3.0	22.0	3.0	26.5	3.2
38HQ960	38HQL40/40FSL60/ 28MQ042	10.5	2.8	15.0	3.0	20.0	3.2	24.0	3.4	25.5	3.5	31.0	3.7
38HQ960	38HQL46/40FSL200/ 28MQ048	13.0	3.2	18.5	3.5	24.0	3.8	28.0	4.0	29.5	4.1	35.5	4.2

OUTDOOR UNIT	INDOOR UNIT	TEMPERATURE OF AIR ENTERING OUTDOOR UNIT (Edb)									
		40		47		50		60		70	
		Cap.	KW	Cap.	KW	Cap.	KW	Cap.	KW	Cap.	KW
38HQ940	38HQL27/40AQ030	27.5	3.1	31.0	3.3	33.0	3.3	39.0	3.5	46.0	3.8
38HQ940	38HQL34/40AQ036 or 38HQL34/40FSL60/ 28MQ036	34.0	3.8	37.5	3.9	39.5	4.1	45.0	4.4	52.0	4.7
38HQ960	38HQL40/40FSL60/ 28MQ042	40.0	4.3	45.5	4.6	48.0	4.8	57.0	5.3	67.0	6.0
38HQ960	38HQL46/40FSL200/ 28MQ048	45.0	4.8	51.0	5.2	53.3	5.4	63.0	5.9	70.4	6.3

Cap. — Capacity (1000 Btuh), includes fan motor heat and deduction for thermal line losses of 15 ft of piping exposed to outdoor conditions

Kw — Power input includes compressor motor power input, indoor and outdoor fan motor input

* Integrated Heating Capacities — Values shown reflect a capacity reduction at those outdoor air temperatures at which frost forms on outdoor coil

NOTE: Heating ratings shown in table are without accessory electric heater and are based on 70 F db air entering indoor coil, 85% rh air entering outdoor coil, and ARI rated cfm. See Heating Capacity Correction Factors table to calculate heating capacity and power input at other cfm and indoor coil entering air temperature

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Electrical data (60 Hz)

INDOOR COMPR SECTION	OUTDOOR FAN COIL SECTION	V/PH	OPERATING VOLTAGE*		COMPR		FAN	MWA
			Max.	Min.	LRA	RLA	FLA	
38HQL27	38HQ940	230/1	254	207	72	17	1.5	24.3
38HQL34	38HQ940				88	20	1.5	28.0
38HQL40	38HQ960				94	24	2.2	33.0
38HQL46	38HQ960				106	27	2.2	36.8

FIA - Full Load Amps

LRA - Locked Rotor Amps

RLA - Rated Load Amps

MWA - Minimum Wire Amps

*Permissible limits of the voltage range at which the units will operate satisfactorily.

NOTES:

1. All units have 24-v control circuit which requires external power source.
2. Use copper or copper-clad aluminum wire only for compressor section; copper wire only for outdoor unit.
3. Units require field-supplied grounding wire. See Installation, Start-Up and Service Instructions for wire sizes.