Bulletin 106C

evapco

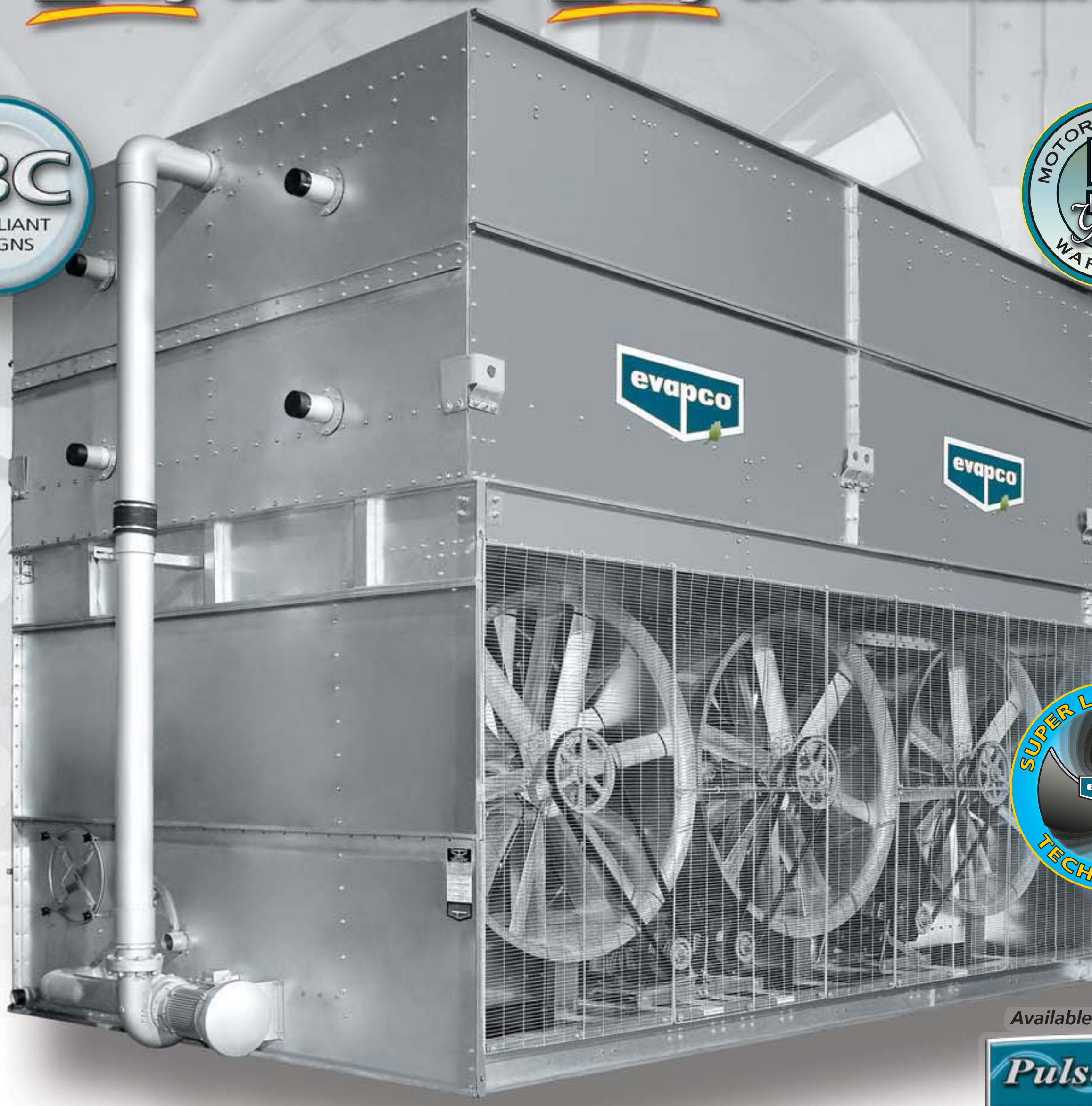
PMC-E

Evaporative Condensers

Easy to Install – Easy to Maintain

IBC COMPLIANT DESIGNS

MOTOR AND DRIVE 5 Year WARRANTY



SUPER LOW SOUND TECHNOLOGY

Available with Optional
Pulse~Pure
Water Treatment System

*Forced Draft, Axial Fan Models Available in Capacities from **124** to **1,408** Ammonia Tons!*

Technology for the Future...Available Today!

U.S. Green Building Council Member
IARW International Association of Refrigerated Warehouses
Member of iiar International Institute of Ammonia Refrigeration www.iiar.org
AHRI Air-Conditioning, Heating, and Refrigeration Institute

Since its founding in 1976, EVAPCO, Incorporated has become an industry leader in the engineering and manufacturing of quality heat transfer products around the world. EVAPCO's mission is to provide first class service and quality products for the following markets:

- Industrial Refrigeration
- Commercial HVAC
- Industrial Process
- Power

EVAPCO's powerful combination of financial strength and technical expertise has established the company as a recognized manufacturer of market-leading products on a worldwide basis. EVAPCO is also recognized for the superior technology of their environmentally friendly product innovations in sound reduction and water management.

EVAPCO is an employee owned company with a strong emphasis on research & development and modern manufacturing plants. EVAPCO has earned a reputation for technological innovation and superior product quality by featuring products that are designed to offer these operating advantages:

- Higher System Efficiency
- Environmentally Friendly
- Lower Annual Operating Costs
- Reliable, Simple Operation and Maintenance

With an ongoing commitment to Research & Development programs, EVAPCO provides the most advanced products in the industry – ***Technology for the Future, Available Today***!

EVAPCO products are manufactured in 17 locations in 8 countries around the world and supplied through a sales network consisting of over 170 offices.

PMC-E Design

The industry standard for forced draft and benefits that make it Easy to

PVC Water Distribution with ZM®II Nozzles

- Large orifice prevents clogging **(no moving parts)**.
- Redesigned nozzles for superior water distribution.
- Threaded nozzles eliminate troublesome grommets.
- Fixed position require zero maintenance.
- Threaded end caps for ease of cleaning.
- Guaranteed for life.

Thermal Pak®II Heat Transfer Technology

- More surface area per plan area than competitive designs.
- Improved heat transfer efficiency due to tube geometry and orientation of tubes.
- Lower refrigerant charge.
- Optional TITAN stainless steel coil technology.

Improved Water Distribution Piping

- Horizontally mounted pumps allow for reduced basin water level.*
- Simplified piping for easier basin access.
- Totally enclosed pump motors assure long, trouble-free life.

*Refer to engineering data for availability.

NEW

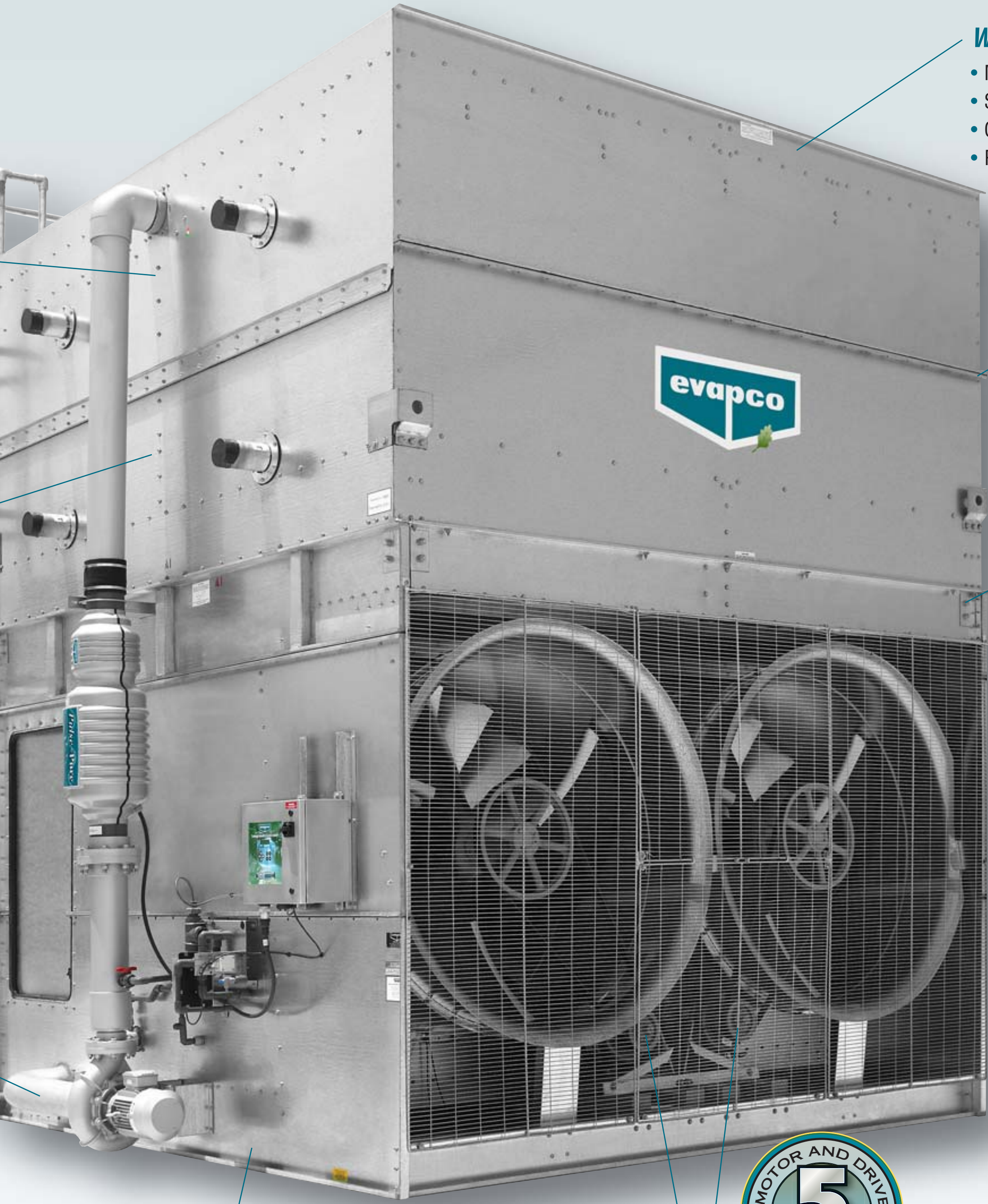
Optional Super Low Sound Fan

(Shown in Photograph)

- Extremely wide chord fan blades for sound sensitive applications.
- One piece molded heavy duty construction.
- 10-13 dB(A) sound reduction on fan side at 50 ft.

and Construction Features

axial fan condensers. The PMC-E is equipped with owner-oriented features install...Easy to maintain...Easy on the operating budget...The Easy Choice!



Water Saver Drift Eliminators

- New patented design reduces drift rate to 0.001%.
- Saves water and reduces water treatment cost.
- Greater structural integrity vs.old style blade-type.
- Recessed into casing for greater protection.

U.S. Patent No. 6315804

Double-Brake Flange Joints

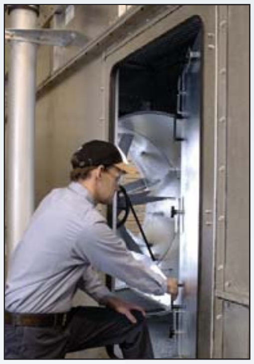
- Stronger than single-brake designs by others.
- Greater structural integrity.
- Minimizes water leaks at field joints.

Unique Field Seam

- Eliminates up to 85% of fasteners.
- Self guiding channels improve quality of field seam to eliminate leaks.
- Easy to install.
- Lower installation cost.

Optional Design Features:

- Man-sized Access Doors.
- External Service Platforms.
- Tandem Fan Drive System (Standard Fan Only).
- Stainless Steel Construction.



Optional Man-sized Access Door

Sloped Pan Bottom

- Pan bottom slopes to drain.
- Easy to clean.
- Stainless steel strainer resists corrosion.

MOTOR AND DRIVE 5 Year WARRANTY

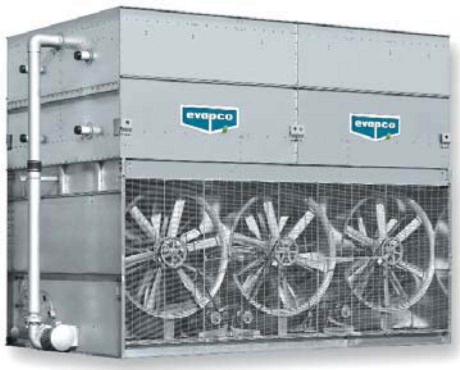
NEW

Individual Fan Drive System

- Increased flexibility for improved capacity control.
- Greater reliability through redundancy.
- Easy motor replacement.
- Front mounted drives for improved maintenance accessibility.

PMC-E Design Features

Proven Performance & Design Flexibility



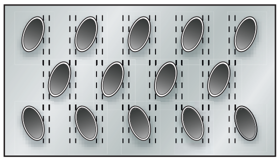
The new PMC-E Evaporative Condenser offers more capacity and greater system design flexibility than ever before. EVAPCO's research and development team has invested hundreds of hours in laboratory testing to develop the next generation in Forced Draft Condenser Technology. These efforts have produced a totally new fan section design which is now combined with the proven Thermal-Pak II® coil technology to offer improved condenser performance.

The PMC-E features more plan area options and fan horsepower options for the system design engineer. With more condenser capacity, more plan area options and greater flexibility in motor selection, the design engineer can now match the condenser performance to the specific application requirements. More equipment choices and more design flexibility mean greater value for the End-User.

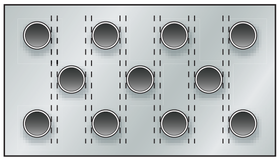
Thermal-Pak II® Coil Design

Lower Refrigerant Charge

Only EVAPCO condensers offer the unique Thermal-Pak II® Coil which assures greater operating efficiency in your condenser. Its unique elliptical tube design allows for closer tube spacing resulting in more surface area per plan area than traditional round tube designs. The Thermal-Pak II® Coil design has lower resistance to air flow and permits greater water loading, making the Thermal-Pak II® Coil the most efficient design available. And now with its new tube circuiting and orientation pattern, the Thermal-Pak II® coil yields a lower refrigerant charge.



Thermal-Pak II® Coil by EVAPCO



Round Tube Coil by Others

Energy Efficient for Lowest Operating Cost

Lower Horsepower Options

The new fan drive system of the PMC-E utilizes larger diameter vane-axial fans in a two stage arrangement to provide more efficient air flow and reduced power consumption. When compared to the traditional centrifugal fan condenser models, the vane-axial fan design can offer up to a 50% reduction in energy consumption. And, with the new PMC-E model selections even more low horsepower options are available to obtain greater energy savings.

Individual Fan Drive System

Capacity Control Flexibility & Operating Redundancy

The new PMC-E fan drive system provides individual motor to fan configuration as standard equipment on all models. The dedicated fan to motor arrangement ensures less “wear & tear” on the drive system versus tandem fan motor drive arrangements resulting in less maintenance. The individual motor to fan design offers greater capacity control flexibility to match the system load requirements. In addition, all Evapco condensers are equipped with an internal baffle system which extends from the pan bottom vertically through the coil bundle. This unique design allows the user to cycle fan motors independently without harmful effects of air by-pass inside the unit. The individual motor to fan design ensures maximum operating redundancy in the condenser fan system when critical operation is necessary. The PMC-E comes standard with a 5 Year motor and drive warranty.

Inverter Duty Motors STANDARD!

Inverter Duty motors are standard on PMC-E Condensers. Inverter Duty motors are totally enclosed, premium efficiency and inverter capable (VFD by others).
Note: Variable Frequency Drive control may require other component modification such as motor shaft grounding brushes, AC load reactors, low pass filters and tuned trap filters to ensure proper motor performance and service life.

Easy Field Assembly

Fewer Fasteners
Lower Installed Cost

The PMC-E features a new field seam design which ensures easier assembly and fewer field seam leaks. The field seam incorporates new self-guiding channels to guide the coil casing section into position and set in place on the bottom fan section of the condenser. In addition, the design eliminates up to 85% of the required fasteners typically used to join the condenser sections in the field significantly reducing the contractor labor costs for installation.

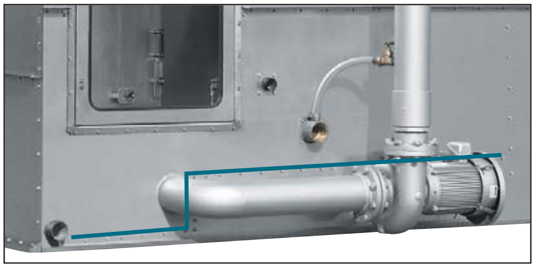
Improved Maintenance

Fan Drive Accessibility

The drive components of the PMC-E are easily accessed for routine maintenance from the front of the unit. Bearing grease fittings are extended to the outside of the unit for ease of lubrication. All drive sheaves have been relocated to the front of the fan section and motors are positioned on a platform base to allow for easy belt tension adjustment.

Easy Clean Sloped Basin

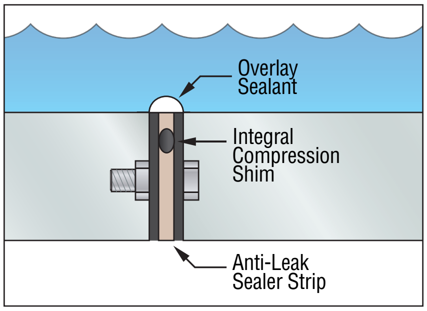
The PMC-E basin is designed to improve maintenance access and make it easier for operating technicians to clean. The bottom of the pan is sloped to the unit drain to ensure that the basin will completely drain and allow sediment and debris that may collect in the basin to be easily flushed from the unit. The design helps to prevent buildup of sedimentary deposits, biological films and standing water. In addition, Evapco offers a special “man-sized” access door option to improve access to this critical area of the unit.



Construction Features

Unique Seam Design–Eliminate Field Leaks

The new PMC-E features Evapco's unique panel construction design which includes a special butyl tape sealer with an integral sealing gasket. Each joint is then backed with a secondary caulking compound and encased in a double-brake flange for added strength and structural integrity. This unique sealing system has been proven effective in both laboratory tests and years of field application.



Superior Water Saver Drift Eliminators
The PMC-E condensers incorporate a patented* highly efficient PVC drift eliminator. The eliminator removes entrained water droplets from the air stream to limit the drift rate to less than 0.001% of the recirculating water rate. With a low drift rate, PMC-E condensers save valuable water and water treatment chemicals. The eliminators feature a honeycomb design which offers greater structural integrity and are recessed in the top of the casing and UV protected for longer life. They are constructed of inert polyvinyl chloride (PVC) which eliminates corrosion in this critical area of the condenser. The eliminators are assembled in sections for easy handling and removal for coil and water distribution system inspection.

*U.S. Patent No. 6315804

IBC Compliance

EVAPCO has been applying advanced structural technology to evaporative condensers for many years. Following seismic events in the mid 1990's EVAPCO introduced the UB Series of induced draft cooling towers, fluid coolers and evaporative condensers. These products were designed, built and independently certified for extreme seismic and wind forces. With the advent of the International Building Code, EVAPCO is now offering a new line of PMC-E Evaporative Condensers that are IBC 2006 compliant as standard construction.

International Building Code

The International Building Code (IBC) is a comprehensive set of regulations addressing the structural design and installation requirements for building systems – including HVAC and industrial refrigeration equipment. As of June 2008, all 50 states plus Washington D.C have adopted the International Building Code. Compared to previous building codes that solely examined anchorage, the earthquake provisions contained within the International Building Code address anchorage, structural integrity, and operational capability of a component following a seismic event. The goal of the IBC is to minimize the loss of life and improve the capability of essential facilities to operate after a seismic event.

The International Building Code (IBC) was developed to replace the *BOCA National Building Code*, ICBO's *Uniform Building Code* and SBCCI's *Standard Building Code*. The International Building Code specifies that all components be designed to resist the equivalent seismic forces as the structure to which they are installed whereas previous building codes focused exclusively on the structure of the building to provide resistance against seismic forces. These components include all aspects of the building architectural, electrical and mechanical systems. The failure of these components during a seismic event has been a common occurrence in recent history. Although the structure of the building may be relatively undamaged from an earthquake, the damage to the nonstructural components could be significant and result in considerable secondary damage to the building (ie. flooding, fire, structural damage).

Seismic Design

The IBC specifies that all installed components must meet the requirements of ASCE 7-05 (American Society of Civil Engineers, *Minimum Design Loads for Buildings and Other Structures*). Exemptions noted in the code are for all mechanical components assigned to seismic design categories A or B. ASCE 7-05 explicitly states that in addition to the attachment and supports, the component itself must be designed to withstand the seismic forces prescribed in the code. Simply stated, the code provisions require that evaporative cooling equipment and all other components permanently installed on a structure must meet the same seismic design criteria as the building.

The seismic design force, utilized for component design, represents an equivalent static force that is applied to the components' center of gravity as described in the following equation:

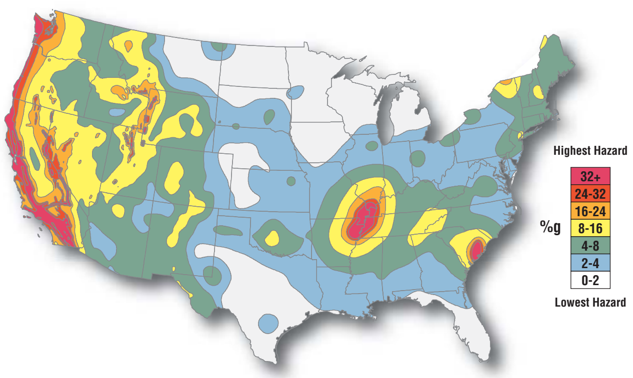
$$F_p = [(0.4 * (a_p) * (S_{DS}) * (W_p)) / (R_p / I_p)] * (1 + 2 * (z / h))$$

- F_p = Seismic Design Force centered at the component's center of gravity
- S_{DS} = Design spectral response acceleration, short period
- a_p = Component amplification factor
- I_p = Component importance factor
- W_p = Component operating weight
- R_p = Component response modification factor
- z = Height in structure of point of attachment of component with respect to the base
- h = Average roof height of structure with respect to the base

The minimum and maximum design force limits are specified as:

$$F_p\text{-min} = 0.3\ SDS\ I_p\ W_p$$
$$F_p\text{-max} = 1.6\ SDS\ I_p\ W_p$$

A series of charts and graphs are used to determine the appropriate factors based on the location of the installation and ultimately the "importance" of the facility. A chart of the potential seismic activity in the United States is shown below.



Map courtesy US Geological Survey website

IBC Compliance

Importance Factor (Ip)

A major parameter that must be determined prior to calculating the seismic design force is the component importance factor (Ip). ASCE 7-05 defines the component importance factor as:

Importance Factor, Ip	Classification
1.5	• Life safety component required to function after seismic event. • Component containing hazardous content • Components installed at Group III (essential) facilities
1.0	All other components

Products such as ammonia refrigerant condensers should always be assigned an importance factor of 1.5 since they contain ammonia. The IBC identifies ammonia as hazardous content in reference of OSHA standards. According to the American Society of Civil Engineers (ASCE) Manual, 07-05 edition, section 13.1.3, hazardous materials require an importance factor of 1.5.

Design Implementation

In order to achieve this goal, an architect or civil engineer is responsible for analyzing the soil and the design of a structure to determine the factors to be used. A mechanical consulting engineer and/or design build contractor applies these factors to advise the manufacturer on the proper design for the application. EVAPCO takes this information and determines the necessary equipment to meet IBC regulations. Evapco then determines the condenser design requirements based on the IBC criteria. The standard PMC-E design is independently certified to meet the 1g IBC compliance factors. For applications that require a more severe seismic duty, EVAPCO offers an optional 5.12g construction design. This process ensures that the mechanical equipment and its components are seismically compliant per the provisions of the International Building Code.

Independent Certification

As required by the International Building Code, EVAPCO supplies a certificate of compliance as part of its submittal documents. The certificate of compliance should demonstrate that the equipment/unit has been independently tested and analyzed in accordance with the IBC program. Evapco has worked closely with Vibrations Mountings and Controls Group (VMC) to complete the independent equipment testing and analysis. A sample of the certificate of compliance and unit label is presented below:


evapco

Certificate of Compliance

LSTE, LPT and PMTQ Cooling Towers
PMWQ, LSWE, LRWB Closed Circuit Coolers
PMC-E, LSC-E and LRC Evaporative Condensers

Are certified to meet or exceed the Seismic and Wind Load Provisions set forth in the applicable building codes for this project.

These products have been manufactured following all applicable quality assurance programs.

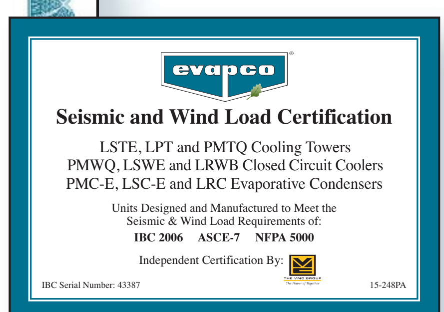
Applicable Building Codes:
IBC 2006
ASCE-7
NFPA 5000

Referenced Report:
VMA-43387

Approval Agency:
VMC Seismic Consulting Group

EVAPCO...Specialists in Heat Transfer Products and Services.

FD IBC COC 001


evapco

Seismic and Wind Load Certification

LSTE, LPT and PMTQ Cooling Towers
PMWQ, LSWE and LRWB Closed Circuit Coolers
PMC-E, LSC-E and LRC Evaporative Condensers

Units Designed and Manufactured to Meet the Seismic & Wind Load Requirements of:
IBC 2006 ASCE-7 NFPA 5000

Independent Certification By:

IBC Serial Number: 43387

15-248PA

PMC-E Selection Procedure

Selection Procedure

Two methods of selection are presented, the first is based on the total heat of rejection as described immediately below. The second and more simple method is based on evaporator tons. The evaporator ton method is only applicable to systems with open type reciprocating compressors.

The heat of rejection method is applicable to all but centrifugal compressor applications and is normally used for selecting evaporative condensers for use with hermetic compressors and screw compressors. It can also be used for standard open type reciprocating compressors as an alternate to the evaporator ton method.

The evaporator ton method is based on the estimated heat of compression. **The heat of rejection method of selection is more accurate and should be used whenever possible.**

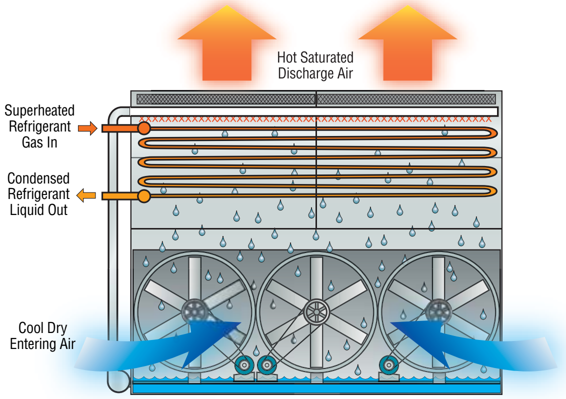
Refer to the factory for selections on systems with centrifugal compressors.

Principle of Operation

The refrigerant gas is discharged from the compressor into the inlet connection of the evaporative condenser. Water from the condenser's sump is continuously flooded over the condenser coil, while ambient air is simultaneously forced into the unit. As the ambient air moves up through the coil section, a portion of the spray water is evaporated into the air stream.

The evaporative process cools the spray water, which in turn cools the tubes containing the refrigerant gas. The cool tube walls cause the refrigerant gas to give up heat and condense into a liquid. The condensed liquid flows out of the coil's sloping tubes to the high pressure liquid receiver for return to the system.

The hot, saturated air is driven through the drift eliminators, where any entrained water droplets are removed. The condenser's fan then discharges this air stream out of the top of the unit at a high velocity, where it can dissipate harmlessly into the atmosphere. The water which was not evaporated falls into the sump and is recirculated by the spray pump to the water distribution system above the condensing coil section.



Principle of Operation

Heat of Rejection Method

In the heat of rejection method, a factor for the specified operating conditions (condensing temperature and wet bulb) is obtained from Table 1 or 2 and multiplied times the heat of rejection.
The resultant figure is used to select a unit from Table 3. Unit capacities are given in Table 3 in thousands of BTU/Hr or MBH.

If the heat of rejection is not known, it can be determined by one of the following formulas:

Open Compressors:
Heat of Rejection = Evaporator Load (BTU/Hr) + Compressor BHP x 2545
Hermetic Compressors:
Heat of Rejection = Evaporator Load (BTU/Hr) + K.W. Compressor Input x 3415

EXAMPLE

Given: 450 ton load, ammonia refrigerant 96.3° condensing temperature, 78° W.B. temperature and 500 compressor BHP.

Selection: Heat of Rejection

450 tons x 12000 = 5,400,000 BTU/Hr
500 BHP x 2545 = 1,272,500 BTU/Hr
Total 6,672,500 BTU/Hr

From Table 2 the capacity factor for 96.3° condensing and 78° W.B. = 1.37 6,672,500 x 1.37 = 9,141,325 BTU/Hr or 9142 MBH. Therefore, select a model PMC-631E-1g.

Note: For screw compressor selections employing water cooled oil cooling, select a condenser for the total MBH as in the example. The condenser can then function in one of two ways:

(1) Recirculating water from the water sump can be used directly in the oil cooler. A separate pump should be employed and the return water should be directed into the water sump at the opposite end from the pump suction.

(2) The condenser coil can be circuited so that water or a glycol-water mixture for the oil cooler can be cooled in a separate section of the coil. Specify load and water flow required.

For refrigerant injection cooled screw compressors, select the condenser in the same manner as shown in the example.

If the oil cooler is supplied by water from a separate source, then the oil cooling load should be deducted from the heat of rejection before making the selection.

Table 1 - HCFC-22 and HFC-134a Heat Rejection Factors

Condensing Pres. psig		Cond. Temp. °F	Wet Bulb Temperature, (°F)																	
HCFC-22	HFC-134a		50	55	60	62	64	66	68	70	72	74	75	76	77	78	80	82	84	86
156	95	85	1.10	1.22	1.39	1.50	1.61	1.75	1.93	2.13	2.42	2.78	3.02	3.29	3.64	4.00	-	-	-	-
168	104	90	.93	1.02	1.14	1.21	1.28	1.36	1.45	1.57	1.71	1.89	2.00	2.12	2.25	2.38	2.85	3.50	-	-
182	114	95	.80	.87	.95	1.00	1.05	1.10	1.15	1.22	1.31	1.40	1.45	1.50	1.56	1.64	1.82	2.07	2.37	2.77
196	124	100	.71	.76	.82	.85	.88	.91	.94	.98	1.03	1.09	1.12	1.15	1.20	1.24	1.34	1.46	1.63	1.82
211	135	105	.63	.66	.70	.72	.75	.77	.80	.83	.87	.91	.93	.95	.97	1.00	1.06	1.13	1.23	1.35
226	146	110	.56	.59	.62	.64	.65	.67	.69	.71	.74	.77	.78	.80	.82	.84	.88	.93	.98	1.04

Note: Consult factory for selections using other refrigerants.

Table 2 - Ammonia (R-717) Heat Rejection Factors

Condensing Pres. psig	Cond. Temp. °F	Wet Bulb Temperature, (°F)																	
		50	55	60	62	64	66	68	70	72	74	75	76	77	78	80	82	84	86
152	85	.98	1.09	1.24	1.34	1.44	1.56	1.72	1.90	2.16	2.48	2.70	2.94	3.25	3.57	-	-	-	-
166	90	.83	.91	1.02	1.08	1.14	1.21	1.29	1.40	1.53	1.69	1.79	1.89	2.01	2.12	2.54	3.12	-	-
181	95	.71	.78	.85	.89	.94	.98	1.03	1.09	1.17	1.25	1.29	1.34	1.39	1.47	1.63	1.85	2.12	2.47
185	96.3	.69	.75	.82	.86	.90	.94	.98	1.03	1.10	1.18	1.22	1.26	1.31	1.37	1.51	1.71	1.94	2.25
197	100	.63	.68	.73	.76	.79	.81	.84	.87	.92	.97	1.00	1.03	1.07	1.11	1.20	1.30	1.46	1.63
214	105	.56	.59	.62	.64	.67	.69	.71	.74	.78	.81	.83	.85	.87	.89	.95	1.01	1.10	1.21
232	110	.50	.53	.55	.57	.58	.60	.62	.63	.66	.69	.70	.71	.73	.75	.79	.83	.87	.93

Table 3 - Unit Heat Rejection

Model	MBH Base	Model	MBH Base	Model	MBH Base	Model	MBH Base	Model	MBH Base	Model	MBH Base
PMC-175E-1g	2572.5	PMC-428E-1g	6291.6	PMC-631E-1g	9275.7	PMC-852E-1g	12524.4	PMC-1006E-1g	14788.2	PMC-1290E-1g	18963.0
PMC-190E-1g	2793.0	PMC-431E-1g	6335.7	PMC-634E-1g	9319.8	PMC-853E-1g	12539.1	PMC-1024E-1g	15052.8	PMC-1358E-1g	19962.6
PMC-210E-1g	3087.0	PMC-450E-1g	6615.0	PMC-636E-1g	9349.2	PMC-856E-1g	12583.2	PMC-1038E-1g	15258.6	PMC-1376E-1g	20227.2
PMC-220E-1g	3234.0	PMC-457E-1g	6717.9	PMC-645E-1g	9481.5	PMC-863E-1g	12686.1	PMC-1071E-1g	15743.7	PMC-1382E-1g	20315.4
PMC-235E-1g	3454.5	PMC-464E-1g	6820.8	PMC-679E-1g	9981.3	PMC-888E-1g	13053.6	PMC-1073E-1g	15773.1	PMC-1438E-1g	21138.6
PMC-240E-1g	3528.0	PMC-481E-1g	7070.7	PMC-688E-1g	10113.6	PMC-889E-1g	13068.3	PMC-1088E-1g	15993.6	PMC-1446E-1g	21256.2
PMC-250E-1g	3675.0	PMC-488E-1g	7173.6	PMC-690E-1g	10143.0	PMC-894E-1g	13141.8	PMC-1116E-1g	16405.2	PMC-1473E-1g	21653.1
PMC-275E-1g	4042.5	PMC-492E-1g	7232.4	PMC-691E-1g	10157.7	PMC-895E-1g	13156.5	PMC-1117E-1g	16419.9	PMC-1549E-1g	22770.3
PMC-295E-1g	4336.5	PMC-495E-1g	7276.5	PMC-719E-1g	10569.3	PMC-900E-1g	13230.0	PMC-1125E-1g	16537.5	PMC-1556E-1g	22873.2
PMC-325E-1g	4777.5	PMC-503E-1g	7394.1	PMC-723E-1g	10628.1	PMC-929E-1g	13656.3	PMC-1127E-1g	16566.9	PMC-1599E-1g	23505.3
PMC-332E-1g	4880.4	PMC-515E-1g	7570.5	PMC-731E-1g	10745.7	PMC-939E-1g	13803.3	PMC-1180E-1g	17346.0	PMC-1625E-1g	23887.5
PMC-335E-1g	4924.5	PMC-519E-1g	7629.3	PMC-737E-1g	10833.9	PMC-940E-1g	13818.0	PMC-1182E-1g	17375.4	PMC-1705E-1g	25063.5
PMC-360E-1g	5292.0	PMC-536E-1g	7879.2	PMC-772E-1g	11348.4	PMC-949E-1g	13950.3	PMC-1189E-1g	17478.3	PMC-1712E-1g	25166.4
PMC-369E-1g	5424.3	PMC-558E-1g	8202.6	PMC-774E-1g	11377.8	PMC-956E-1g	14053.2	PMC-1201E-1g	17654.7	PMC-1776E-1g	26107.2
PMC-375E-1g	5512.5	PMC-559E-1g	8217.3	PMC-778E-1g	11436.6	PMC-962E-1g	14141.4	PMC-1203E-1g	17684.1	PMC-1788E-1g	26283.6
PMC-386E-1g	5674.2	PMC-564E-1g	8290.8	PMC-800E-1g	11760.0	PMC-974E-1g	14317.8	PMC-1211E-1g	17801.7	PMC-1877E-1g	27591.9
PMC-397E-1g	5835.9	PMC-591E-1g	8687.7	PMC-801E-1g	11774.7	PMC-976E-1g	14347.2	PMC-1258E-1g	18492.6	PMC-1879E-1g	27621.3
PMC-400E-1g	5880.0	PMC-596E-1g	8761.2	PMC-811E-1g	11921.7	PMC-983E-1g	14450.1	PMC-1261E-1g	18536.7	PMC-1985E-1g	29179.5
PMC-420E-1g	6174.0	PMC-601E-1g	8834.7	PMC-831E-1g	12215.7	PMC-989E-1g	14538.3	PMC-1269E-1g	18654.3		
PMC-426E-1g	6262.2	PMC-605E-1g	8893.5	PMC-840E-1g	12348.0	PMC-992E-1g	14582.4	PMC-1275E-1g	18742.5		

PMC-E Selection Procedure

Evaporator Ton Method

In the evaporator ton method, factors for the specified operating conditions (suction temperature, condensing temperature and wet bulb) are obtained from either Table 5 or 6 and multiplied times the heat load in tons. The resultant figure is used to select a unit from Table 4. The condenser model in Table 4 is equal to the unit capacity in evaporator tons for HCFC-22 or HFC-134a conditions of 105°F condensing, 40°F suction and 78° wet bulb.

EXAMPLE

Given: 300 ton evaporator load, R-717, condensing at 95° F, with +10° F suction and 76° F wet bulb temperatures.

Selection: The capacity factor from Table 6 for the given condensing and wet bulb conditions is 1.38, and the capacity factor for the suction temperature of +10° F is 1.03, so the corrected capacity required may be determined as:

300 X 1.38 X 1.03 = 426 corrected tons. Therefore, select a model PMC-428E-1g, PMC-431E-1g or PMC-450E-1g depending on unit type desired, and any layout or horsepower considerations.

Table 4 - Unit Sizes

PMC-E Models									
Model	Capacity	Model	Capacity	Model	Capacity	Model	Capacity	Model	Capacity
PMC-175E-1g	175	PMC-464E-1g	464	PMC-719E-1g	719	PMC-949E-1g	949	PMC-1258E-1g	1258
PMC-190E-1g	190	PMC-481E-1g	481	PMC-723E-1g	723	PMC-956E-1g	956	PMC-1261E-1g	1261
PMC-210E-1g	210	PMC-488E-1g	488	PMC-731E-1g	731	PMC-962E-1g	962	PMC-1269E-1g	1269
PMC-220E-1g	220	PMC-492E-1g	492	PMC-737E-1g	737	PMC-974E-1g	974	PMC-1275E-1g	1275
PMC-235E-1g	235	PMC-495E-1g	495	PMC-772E-1g	772	PMC-976E-1g	976	PMC-1290E-1g	1290
PMC-240E-1g	240	PMC-503E-1g	503	PMC-774E-1g	774	PMC-983E-1g	983	PMC-1358E-1g	1358
PMC-250E-1g	250	PMC-515E-1g	515	PMC-778E-1g	778	PMC-989E-1g	989	PMC-1376E-1g	1376
PMC-275E-1g	275	PMC-519E-1g	519	PMC-800E-1g	800	PMC-992E-1g	992	PMC-1382E-1g	1382
PMC-295E-1g	295	PMC-536E-1g	536	PMC-801E-1g	801	PMC-1006E-1g	1006	PMC-1438E-1g	1438
PMC-325E-1g	325	PMC-558E-1g	558	PMC-811E-1g	811	PMC-1024E-1g	1024	PMC-1446E-1g	1446
PMC-332E-1g	332	PMC-559E-1g	559	PMC-831E-1g	831	PMC-1038E-1g	1038	PMC-1473E-1g	1473
PMC-335E-1g	335	PMC-564E-1g	564	PMC-840E-1g	840	PMC-1071E-1g	1071	PMC-1549E-1g	1549
PMC-360E-1g	360	PMC-591E-1g	591	PMC-852E-1g	852	PMC-1073E-1g	1073	PMC-1556E-1g	1556
PMC-369E-1g	369	PMC-596E-1g	596	PMC-853E-1g	853	PMC-1088E-1g	1088	PMC-1599E-1g	1599
PMC-375-E-1g	375	PMC-601E-1g	601	PMC-856E-1g	856	PMC-1116E-1g	1116	PMC-1625E-1g	1625
PMC-386E-1g	386	PMC-605E-1g	605	PMC-863E-1g	863	PMC-1117E-1g	1117	PMC-1705E-1g	1705
PMC-397E-1g	397	PMC-631E-1g	631	PMC-888E-1g	888	PMC-1125E-1g	1125	PMC-1712E-1g	1712
PMC-400E-1g	400	PMC-634E-1g	634	PMC-889E-1g	889	PMC-1127E-1g	1127	PMC-1776E-1g	1776
PMC-420E-1g	420	PMC-636E-1g	636	PMC-894E-1g	894	PMC-1180E-1g	1180	PMC-1788E-1g	1788
PMC-426E-1g	426	PMC-645E-1g	645	PMC-895E-1g	895	PMC-1182E-1g	1182	PMC-1877E-1g	1877
PMC-428E-1g	428	PMC-679E-1g	679	PMC-900E-1g	900	PMC-1189E-1g	1189	PMC-1879E-1g	1879
PMC-431E-1g	431	PMC-688E-1g	688	PMC-929E-1g	929	PMC-1201E-1g	1201	PMC-1985E-1g	1985
PMC-450E-1g	450	PMC-690E-1g	690	PMC-939E-1g	939	PMC-1203E-1g	1203		
PMC-457E-1g	457	PMC-691E-1g	691	PMC-940E-1g	940	PMC-1211E-1g	1211		

Table 5 - HCFC-22 and HFC-134a Capacity Factors

Condensing Pres. psig HCFC-22	Condensing Pres. psig HFC-134a	Cond. Temp. °F	Wet Bulb Temperature, (°F) 50	55	60	62	64	66	68	70	72	74	75	76	77	78	80	82	84	86
156	95	85	1.05	1.16	1.32	1.43	1.53	1.66	1.83	2.02	2.30	2.64	2.87	3.13	3.46	3.80	-	-	-	-
168	104	90	.90	.98	1.10	1.17	1.24	1.31	1.40	1.52	1.65	1.82	1.93	2.05	2.17	2.30	2.75	3.38	-	-
182	114	95	.78	.85	.93	.98	1.02	1.07	1.12	1.19	1.28	1.37	1.42	1.46	1.52	1.60	1.78	2.02	2.31	2.70
196	124	100	.70	.75	.81	.84	.87	.90	.93	.97	1.02	1.08	1.11	1.14	1.19	1.23	1.33	1.44	1.61	1.80
211	135	105	.63	.66	.70	.72	.75	.77	.80	.83	.87	.91	.93	.95	.97	1.00	1.06	1.13	1.23	1.35
226	146	110	.57	.60	.63	.65	.66	.68	.70	.72	.75	.78	.79	.81	.83	.85	.89	.94	.99	1.05

Suction Temp. °F		-20°	-10°	-0°	+10°	+20°	+30°	+40°	+50°
Suction Press. (psig)	HCFC-22	10.1	16.5	24.0	32.8	43.0	54.9	68.5	84.0
	HFC-134a	-1.8	1.9	6.5	11.9	18.4	26.1	35.0	45.4
Capacity Factor		1.22	1.17	1.13	1.09	1.06	1.03	1.00	0.97

Table 6 - Ammonia (R-717) Capacity Factors

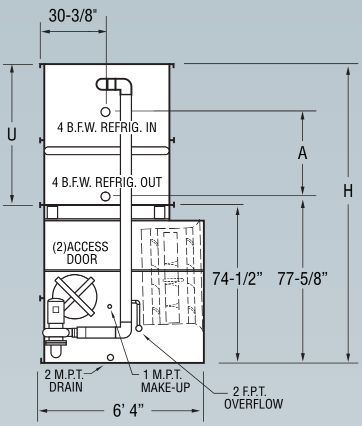
Condensing Pres. psig	Cond. Temp. °F	Wet Bulb Temperature, (°F) 50	55	60	62	64	66	68	70	72	74	75	76	77	78	80	82	84	86
152	85	.99	1.09	1.25	1.34	1.44	1.57	1.73	1.91	2.17	2.49	2.71	2.95	3.26	3.59	-	-	-	-
166	90	.84	.93	1.03	1.10	1.16	1.23	1.32	1.42	1.55	1.71	1.81	1.92	2.04	2.16	2.59	3.17	-	-
181	95	.74	.80	.87	.92	.97	1.01	1.06	1.12	1.21	1.29	1.33	1.38	1.44	1.51	1.68	1.91	2.18	2.55
185	96.3	.72	.78	.85	.89	.93	.97	1.01	1.07	1.14	1.22	1.26	1.30	1.35	1.41	1.56	1.76	2.01	2.33
197	100	.66	.71	.76	.79	.82	.85	.87	.91	.96	1.01	1.04	1.07	1.12	1.15	1.25	1.36	1.52	1.69
214	105	.59	.62	.66	.68	.71	.73	.75	.78	.82	.86	.88	.90	.91	.94	1.00	1.07	1.16	1.27
232	110	.53	.56	.59	.61	.62	.64	.66	.68	.71	.73	.74	.76	.78	.80	.84	.89	.93	.99

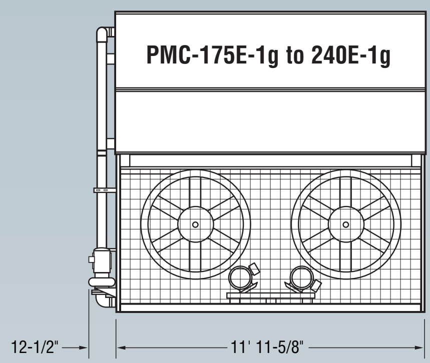
Suction Temp. °F	-30°	-20°	-10°	0°	+10°	+20°	+30°	+40°
Suction Press. (psig)	-1.6	3.6	9.0	15.7	23.8	33.5	45.0	58.6
Capacity Factor	1.18	1.14	1.10	1.07	1.03	1.00	0.97	0.95

Note: Consult factory for selections using other refrigerants.

Engineering & Dimensions Data

PMC-175E-1g to 375E-1g





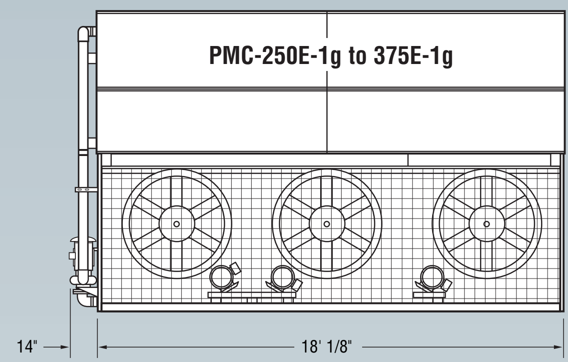


Table 7 Engineering Data

Model No.	R-717 Capacity Tons*	Fans		Weights (lbs)†			Refrigerant Operating Charge lbs.***	Coil Volume ft^3	Spray Pump		Remote Sump			Dimensions (in.)		
		HP	CFM	Shipping	Heaviest Section†	Operating			HP	GPM	Gallons Req'd**	Conn. Size	Operating Weight	Height H	Upper U	Coil A
PMC-175E-1g	124	(2)5	31,300	8,090	5,220	10,410	165	22	2	345	200	8	9,360	130-3/8	57-3/8	30-3/4
PMC-190E-1g	135	(2)5	34,000	8,090	5,220	10,410	165	22	2	345	200	8	9,360	130-3/8	57-3/8	30-3/4
PMC-210E-1g	149	(2)5	33,500	9,050	6,180	11,400	200	28	2	345	200	8	10,350	138-7/8	65-7/8	39-1/4
PMC-220E-1g	156	(2)5	33,000	10,050	7,180	12,440	240	33	2	345	200	8	11,390	147-3/8	74-3/8	47-3/4
PMC-235E-1g	167	(2)7.5	36,600	9,150	6,180	11,500	200	28	2	345	200	8	10,450	138-7/8	65-7/8	39-1/4
PMC-240E-1g	170	(2)7.5	35,500	10,150	7,180	12,540	240	33	2	345	200	8	11,490	147-3/8	74-3/8	47-3/4
PMC-250E-1g	177	(3)5	54,000	10,570	6,210	13,990	185	25	3	515	260	10	12,040	121-7/8	48-7/8	22-1/4
PMC-275E-1g	195	(3)5	48,500	12,080	7,720	15,560	240	33	3	515	260	10	13,600	130-3/8	57-3/8	30-3/4
PMC-295E-1g	209	(3)5	51,900	12,080	7,720	15,560	240	33	3	515	260	10	13,600	130-3/8	57-3/8	30-3/4
PMC-325E-1g	230	(3)5	50,900	13,530	9,170	17,070	300	41	3	515	260	10	15,110	138-7/8	65-7/8	39-1/4
PMC-335E-1g	238	(3)5	50,300	15,030	10,670	18,630	360	49	3	515	260	10	16,670	147-3/8	74-3/8	47-3/4
PMC-360E-1g	255	(3)7.5	57,000	13,690	9,170	17,230	300	41	3	515	260	10	15,270	138-7/8	65-7/8	39-1/4
PMC-375E-1g	266	(3)7.5	56,300	15,190	10,670	18,790	360	49	3	515	260	10	16,830	147-3/8	74-3/8	47-3/4

* Tons at standard conditions: 96.3°F condensing, 20°F suction and 78°F W.B.

** Gallons shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation. (12" would normally be sufficient.)

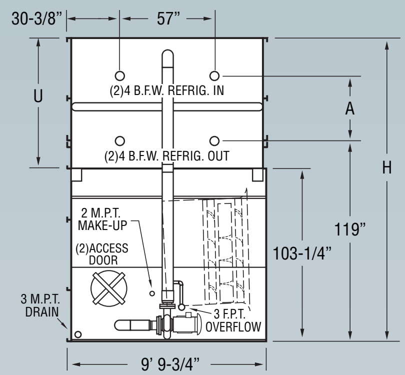
† Heaviest section is the upper coil section. **When 5.12 seismic design is required consult the factory for specific weights.**

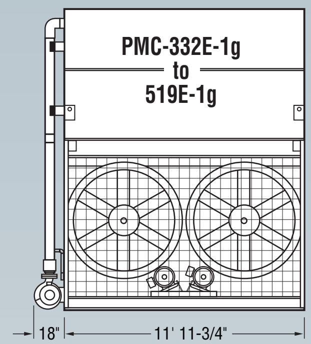
*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R-22 and 1.98 for R-134a.
Dimensions are subject to change. Do not use for pre-fabrication.

evapco

Engineering & Dimensions Data

PMC-332E-1g to 778E-1g





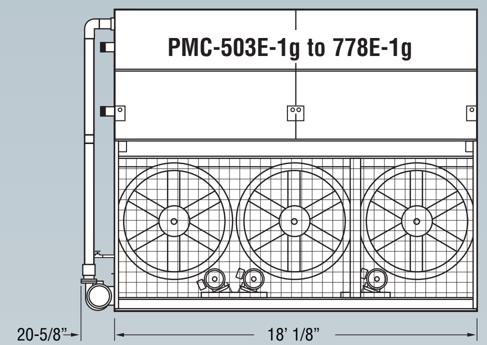


Table 8 Engineering Data

Model No.	R-717 Capacity Tons*	Fans		Weights (lbs)†			Refrigerant Operating Charge lbs.***	Coil Volume ft^3	Spray Pump		Remote Sump			Dimensions (in.)		
		HP	CFM	Shipping	Heaviest Section†	Operating			HP	GPM	Gallons Req'd**	Conn. Size	Operating Weight	Height H	Upper U	Coil A
PMC-332E-1g	235	(2)5	61,000	12,870	8,590	16,950	250	34	5	685	500	10	16,270	163-3/8	61	22-1/4
PMC-369E-1g	262	(2)7.5	70,000	12,970	8,590	17,050	250	34	5	685	500	10	16,370	163-3/8	61	22-1/4
PMC-386E-1g	274	(2)5	59,200	16,700	12,420	20,940	405	56	5	685	500	10	20,260	180-3/8	78	39-1/4
PMC-397E-1g	282	(2)10	77,200	13,000	8,590	17,080	250	34	5	685	500	10	16,400	163-3/8	61	22-1/4
PMC-400E-1g	284	(2)7.5	69,000	14,940	10,560	19,100	325	44	5	685	500	10	18,420	171-7/8	69-1/2	30-3/4
PMC-426E-1g	302	(2)7.5	67,900	16,800	12,420	21,040	405	56	5	685	500	10	20,360	180-3/8	78	39-1/4
PMC-428E-1g	304	(2)15	88,700	113,260	8,590	17,340	250	34	5	685	500	10	16,660	163-3/8	61	22-1/4
PMC-431E-1g	306	(2)10	76,000	14,970	10,560	19,130	325	44	5	685	500	10	18,450	171-7/8	69-1/2	30-3/4
PMC-457E-1g	324	(2)10	74,900	16,830	12,420	21,070	405	56	5	685	500	10	20,390	180-3/8	78	39-1/4
PMC-464E-1g	329	(2)15	87,400	15,230	10,560	19,390	325	44	5	685	500	10	18,710	171-7/8	69-1/2	30-3/4
PMC-481E-1g	341	(2)10	73,800	18,780	14,370	23,090	480	66	5	685	500	10	22,410	188-7/8	86-1/2	47-3/4
PMC-492E-1g	349	(2)15	86,100	17,090	12,420	21,330	405	56	5	685	500	10	20,650	180-3/8	78	39-1/4
PMC-519E-1g	368	(2)15	84,800	19,040	14,370	23,350	480	66	5	685	500	10	22,670	188-7/8	86-1/2	47-3/4
PMC-503E-1g	357	(3)5	91,800	19,590	12,580	25,910	365	50	7.5	1030	620	12	23,710	163-3/8	61	22-1/4
PMC-558E-1g	396	(3)7.5	105,300	19,750	12,580	26,070	365	50	7.5	1030	620	12	23,870	163-3/8	61	22-1/4
PMC-596E-1g	423	(3)10	116,100	19,800	12,580	26,120	365	50	7.5	1030	620	12	23,920	163-3/8	61	22-1/4
PMC-605E-1g	429	(3)7.5	103,800	22,680	15,510	29,120	485	66	7.5	1030	620	12	26,920	171-7/8	69-1/2	30-3/4
PMC-636E-1g	451	(3)15	133,500	20,190	12,580	26,510	365	50	7.5	1030	620	12	24,310	163-3/8	61	22-1/4
PMC-645E-1g	457	(3)10	114,400	22,730	15,510	29,170	485	66	7.5	1030	620	12	26,970	171-7/8	69-1/2	30-3/4
PMC-690E-1g	489	(3)15	131,500	23,120	15,510	29,560	485	66	7.5	1030	620	12	27,360	171-7/8	69-1/2	30-3/4
PMC-691E-1g	490	(3)10	112,700	25,550	18,330	32,100	600	82	7.5	1030	620	12	29,900	180-3/8	78	39-1/4
PMC-719E-1g	510	(3)10	111,100	28,480	21,260	35,150	720	98	7.5	1030	620	12	32,950	188-7/8	86-1/2	47-3/4
PMC-731E-1g	518	(3)15	129,600	25,940	18,330	32,490	600	82	7.5	1030	620	12	30,290	180-3/8	78	39-1/4
PMC-778E-1g	552	(3)15	127,600	28,870	21,260	35,540	720	98	7.5	1030	620	12	33,340	188-7/8	86-1/2	47-3/4

* Tons at standard conditions: 96.3°F condensing, 20°F suction and 78°F W.B.

** Gallons shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation. (12" would normally be sufficient.)

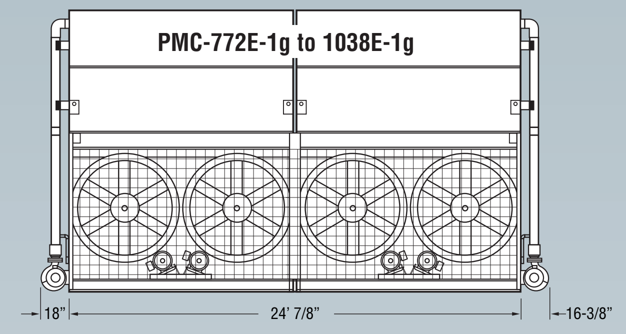
† Heaviest section is the upper coil section. **When 5.12 seismic design is required consult the factory for specific weights.**

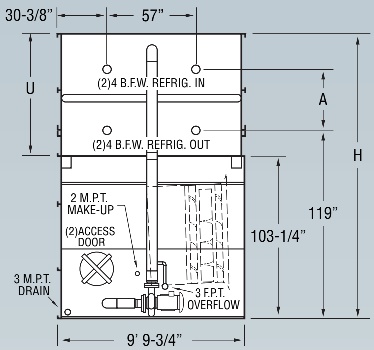
*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R-22 and 1.98 for R-134a.

Dimensions are subject to change. Do not use for pre-fabrication.

Engineering & Dimensions Data

PMC-772E-1g to 1556E-1g





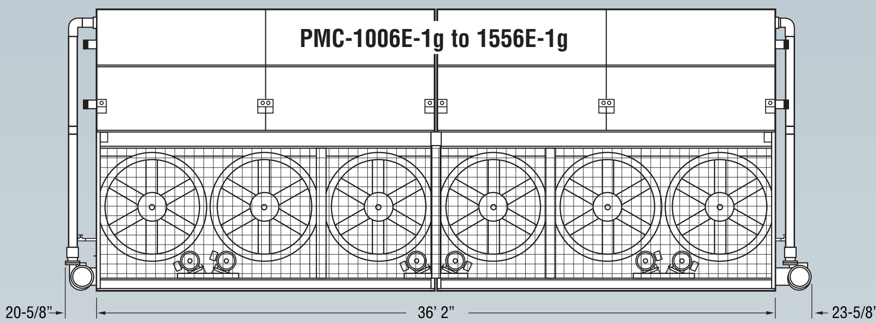


Table 8 Engineering Data

Model No.	R-717 Capacity Tons*	Fans		Weights (lbs)†			Refrigerant Operating Charge lbs.***	Coil Volume ft^3	Spray Pump		Remote Sump			Dimensions (in.)		
		HP	CFM	Shipping	Heaviest Section†	Operating			HP	GPM	Gallons Req'd**	Conn. Size	Operating Weight	Height H	Upper U	Coil A
PMC-772E-1g	548	(4)5	118,500	33,850	12,320	42,690	805	112	(2)5	1370	930	12	40,550	180-3/8	78	39-1/4
PMC-801E-1g	568	(4)7.5	137,900	30,140	10,360	38,820	650	89	(2)5	1370	930	12	36,680	171-7/8	69-1/2	30-3/4
PMC-853E-1g	605	(4)7.5	135,900	34,060	12,320	42,900	805	112	(2)5	1370	930	12	40,760	180-3/8	78	39-1/4
PMC-863E-1g	612	(4)10	152,100	30,210	10,360	38,890	650	89	(2)5	1370	930	12	36,750	171-7/8	69-1/2	30-3/4
PMC-888E-1g	630	(4)7.5	133,900	38,160	14,370	47,150	960	131	(2)5	1370	930	12	45,010	188-7/8	86-1/2	47-3/4
PMC-929E-1g	659	(4)15	174,800	30,730	10,360	39,410	650	89	(2)5	1370	930	12	37,270	171-7/8	69-1/2	30-3/4
PMC-962E-1g	682	(4)10	147,600	38,230	14,370	47,220	960	131	(2)5	1370	930	12	45,080	188-7/8	86-1/2	47-3/4
PMC-983E-1g	697	(4)15	172,200	34,650	12,320	43,490	805	112	(2)5	1370	930	12	41,350	180-3/8	78	39-1/4
PMC-1038E-1g	736	(4)15	169,600	38,750	14,370	47,740	960	131	(2)5	1370	930	12	45,600	188-7/8	86-1/2	47-3/4
PMC-1006E-1g	713	(6)5	183,700	37,680	13,280	50,650	735	100	(2)7.5	2060	1400	14	47,370	163-3/8	61	22-1/4
PMC-1088E-1g	772	(6)5	181,000	43,800	15,260	57,000	965	132	(2)7.5	2060	1400	14	53,730	171-7/8	69-1/2	30-3/4
PMC-1116E-1g	791	(6)7.5	210,600	37,990	13,590	50,960	735	100	(2)7.5	2060	1400	14	47,680	163-3/8	61	22-1/4
PMC-1189E-1g	843	(6)10	232,300	38,090	13,690	51,060	735	100	(2)7.5	2060	1400	14	47,780	163-3/8	61	22-1/4
PMC-1211E-1g	859	(6)7.5	207,500	44,110	15,260	57,310	965	132	(2)7.5	2060	1400	14	54,040	171-7/8	69-1/2	30-3/4
PMC-1275E-1g	904	(6)7.5	204,500	50,010	18,210	63,450	1200	164	(2)7.5	2060	1400	14	60,170	180-3/8	78	39-1/4
PMC-1290E-1g	915	(6)10	228,900	44,210	15,260	57,410	965	132	(2)7.5	2060	1400	14	54,140	171-7/8	69-1/2	30-3/4
PMC-1382E-1g	980	(6)10	225,500	50,110	18,210	63,550	1200	164	(2)7.5	2060	1400	14	60,270	180-3/8	78	39-1/4
PMC-1438E-1g	1020	(6)10	222,100	56,210	21,260	69,880	1435	196	(2)7.5	2060	1400	14	66,600	188-7/8	86-1/2	47-3/4
PMC-1556E-1g	1104	(6)15	255,300	56,990	21,260	70,660	1435	196	(2)7.5	2060	1400	14	67,380	188-7/8	86-1/2	47-3/4

* Tons at standard conditions: 96.3°F condensing, 20°F suction and 78°F W.B.

** Gallons shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation. (12" would normally be sufficient.)

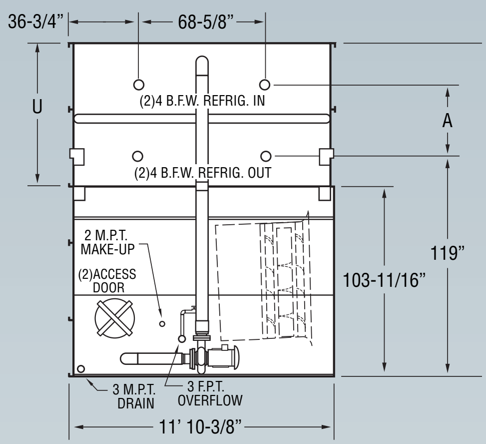
† Heaviest section is the upper coil section. **When 5.12 seismic design is required consult the factory for specific weights.**

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R-22 and 1.98 for R-134a.

Dimensions are subject to change. Do not use for pre-fabrication.

Engineering & Dimensions Data

PMC-420E-1g to 631E-1g



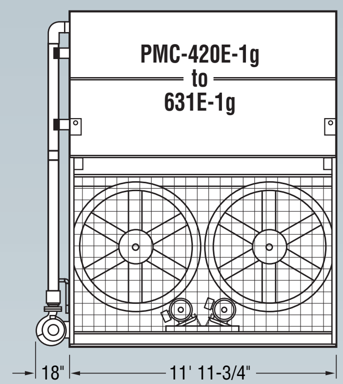


Table 9 Engineering Data

Model No.	R-717 Capacity Tons*	Fans		Weights (lbs)†			Refrigerant Operating Charge lbs.***	Coil Volume ft³	Spray Pump		Remote Sump			Dimensions (in.)		
		HP	CFM	Shipping	Heaviest Section†	Operating			HP	GPM	Gallons Req'd**	Conn. Size	Operating Weight	Height H	Upper U	Coil A
PMC-420E-1g	298	(2)7.5	79,200	15,050	9,970	20,090	305	42	5	800	570	10	19,060	163-3/8	61	22-1/4
PMC-450E-1g	319	(2)10	84,500	15,090	9,970	20,130	305	42	5	800	570	10	19,100	163-3/8	61	22-1/4
PMC-488E-1g	346	(2)10	83,200	17,480	12,360	22,620	400	55	5	800	570	10	21,590	171-7/8	69-1/2	30-3/4
PMC-495E-1g	351	(2)15	97,100	15,350	9,970	20,390	305	42	5	800	570	10	19,360	163-3/8	61	22-1/4
PMC-515E-1g	365	(2)20	100,300	15,470	9,970	20,510	305	42	5	800	570	10	19,480	163-3/8	61	22-1/4
PMC-536E-1g	380	(2)15	95,600	17,740	12,360	22,880	400	55	5	800	570	10	21,850	171-7/8	69-1/2	30-3/4
PMC-559E-1g	396	(2)20	98,700	17,860	12,360	23,000	400	55	5	800	570	10	21,970	171-7/8	69-1/2	30-3/4
PMC-564E-1g	400	(2)15	94,400	20,010	14,630	25,240	495	68	5	800	570	10	24,210	180-3/8	78	39-1/4
PMC-591E-1g	419	(2)15	92,800	22,240	16,860	27,570	590	81	5	800	570	10	26,540	188-7/8	86-1/2	47-3/4
PMC-601E-1g	426	(2)20	100,300	20,130	14,630	25,360	495	68	5	800	570	10	24,330	180-3/8	78	39-1/4
PMC-631E-1g	448	(2)20	98,800	22,360	16,860	27,690	590	81	5	800	570	10	26,660	188-7/8	86-1/2	47-3/4

* Tons at standard conditions: 96.3°F condensing, 20°F suction and 78°F W.B.

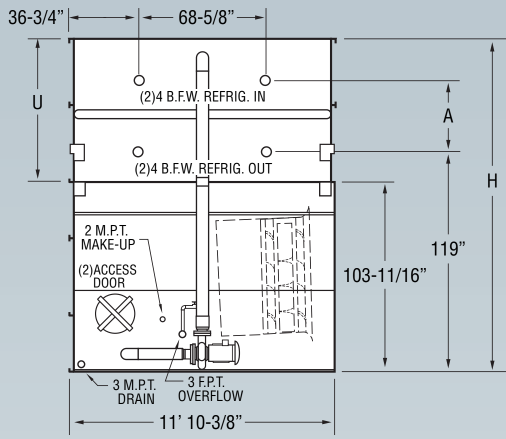
** Gallons shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation. (12” would normally be sufficient.)

† Heaviest section is the upper coil section. **When 5.12 seismic design is required consult the factory for specific weights.**

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R-22 and 1.98 for R-134a.
Dimensions are subject to change. Do not use for pre-fabrication.

Engineering & Dimensions Data

PMC-634E-1g to 939E-1g



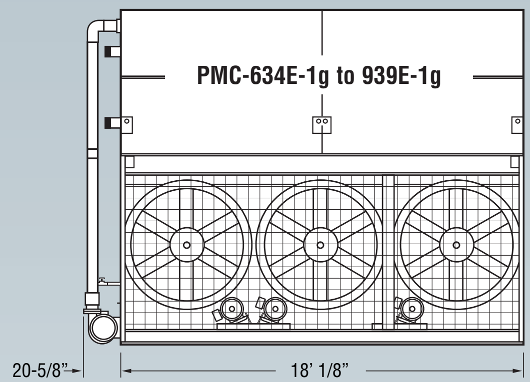


Table 9 Engineering Data

Model No.	R-717 Capacity Tons*	Fans		Weights (lbs)†			Refrigerant Operating Charge lbs.***	Coil Volume ft^3	Spray Pump		Remote Sump			Dimensions (in.)		
		HP	CFM	Shipping	Heaviest Section†	Operating			HP	GPM	Gallons Req'd**	Conn. Size	Operating Weight	Height H	Upper U	Coil A
PMC-634E-1g	450	(3)7.5	118,400	22,920	14,920	30,250	450	62	7.5	1200	735	12	27,590	163-3/8	61	22-1/4
PMC-679E-1g	482	(3)10	126,300	22,970	14,920	30,300	450	62	7.5	1200	735	12	27,640	163-3/8	61	22-1/4
PMC-688E-1g	488	(3)7.5	116,700	26,490	18,490	33,970	595	81	7.5	1200	735	12	31,310	171-7/8	69-1/2	30-3/4
PMC-723E-1g	513	(3)7.5	115,200	29,930	21,930	37,550	740	101	7.5	1200	735	12	34,890	180-3/8	78	39-1/4
PMC-737E-1g	523	(3)10	124,500	26,540	18,490	34,020	595	81	7.5	1200	735	12	31,360	171-7/8	69-1/2	22-1/4
PMC-774E-1g	549	(3)10	122,600	29,980	21,930	37,600	740	101	7.5	1200	735	12	34,940	180-3/8	78	39-1/4
PMC-800E-1g	567	(3)15	143,000	26,930	18,490	34,410	595	81	7.5	1200	735	12	31,750	171-7/8	69-1/2	30-3/4
PMC-831E-1g	589	(3)20	147,600	27,120	18,490	34,600	595	81	7.5	1200	735	12	31,940	171-7/8	69-1/2	30-3/4
PMC-856E-1g	607	(3)15	141,200	30,370	21,930	37,990	740	101	7.5	1200	735	12	35,330	180-3/8	78	39-1/4
PMC-889E-1g	630	(3)15	138,800	33,580	25,140	41,350	885	121	7.5	1200	735	12	38,690	188-7/8	86-1/2	47-3/4
PMC-894E-1g	634	(3)20	149,900	30,560	21,930	38,180	740	101	7.5	1200	735	12	35,520	180-3/8	78	39-1/4
PMC-939E-1g	666	(3)20	147,700	33,770	25,140	41,540	885	121	7.5	1200	735	12	38,880	188-7/8	86-1/2	47-3/4

* Tons at standard conditions: 96.3°F condensing, 20°F suction and 78°F W.B.

** Gallons shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation. (12" would normally be sufficient.)

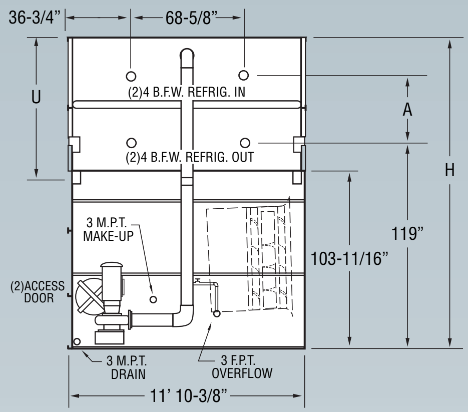
† Heaviest section is the upper coil section. **When 5.12 seismic design is required consult the factory for specific weights.**

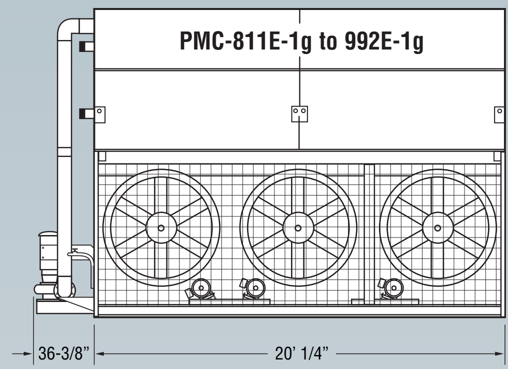
*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R-22 and 1.98 for R-134a.

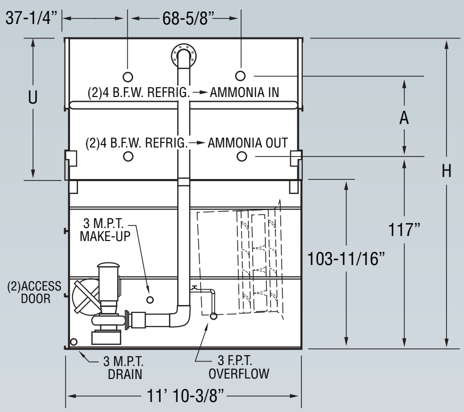
Dimensions are subject to change. Do not use for pre-fabrication.

Engineering & Dimensions Data

PMC-811E-1g to 1258E-1g







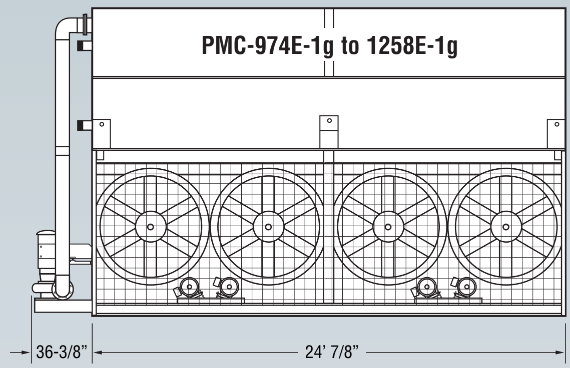


Table 10 Engineering Data

Model No.	R-717 Capacity Tons*	Fans		Weights (lbs)†			Refrigerant Operating Charge lbs.***	Coil Volume ft³	Spray Pump		Remote Sump			Dimensions (in.)		
		HP	CFM	Shipping	Heaviest Section†	Operating			HP	GPM	Gallons Req'd**	Conn. Size	Operating Weight	Height H	Upper U	Coil A
PMC-811E-1g	575	(3)10	130,000	32,820	24,120	41,490	820	112	10	1400	815	14	38,500	180-3/8	78	39-1/4
PMC-852E-1g	604	(3)10	128,000	36,890	28,190	45,720	980	134	10	1400	815	14	42,730	188-7/8	86-1/2	47-3/4
PMC-895E-1g	635	(3)15	149,600	33,210	24,120	41,880	820	112	10	1400	815	14	38,890	180-3/8	78	39-1/4
PMC-940E-1g	667	(3)15	147,100	37,280	28,190	46,110	980	134	10	1400	815	14	43,120	188-7/8	86-1/2	47-3/4
PMC-949E-1g	673	(3)20	158,900	33,400	24,120	42,070	820	112	10	1400	815	14	39,080	180-3/8	78	39-1/4
PMC-992E-1g	704	(3)20	156,600	37,470	28,190	46,300	980	134	10	1400	815	14	43,310	188-7/8	86-1/2	47-3/4
PMC-974E-1g††	691	(4)10	166,800	33,970	23,710	45,130	790	108	10	1600	1080	14	42,330	178-7/8	76-1/2	38-3/4
PMC-1071E-1g††	760	(4)15	191,600	34,500	23,710	45,660	790	108	10	1600	1080	14	42,860	178-7/8	76-1/2	38-3/4
PMC-1125E-1g††	798	(4)15	189,100	39,090	28,300	50,440	985	134	10	1600	1080	14	47,640	188-7/8	86-1/2	48-3/4
PMC-1180E-1g††	837	(4)15	186,000	43,950	33,160	55,500	1175	161	10	1600	1080	14	52,700	198-7/8	96-1/2	58-3/4
PMC-1201E-1g††	852	(4)20	200,900	39,340	28,300	50,690	985	134	10	1600	1080	14	47,890	188-7/8	86-1/2	48-3/4
PMC-1258E-1g††	892	(4)20	197,900	44,200	33,160	55,750	1175	161	10	1600	1080	14	52,950	198-7/8	96-1/2	58-3/4

* Tons at standard conditions: 96.3°F condensing, 20°F suction and 78°F W.B.

** Gallons shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation. (12” would normally be sufficient.)

† Heaviest section is the upper coil section. **When 5.12 seismic design is required consult the factory for specific weights.**

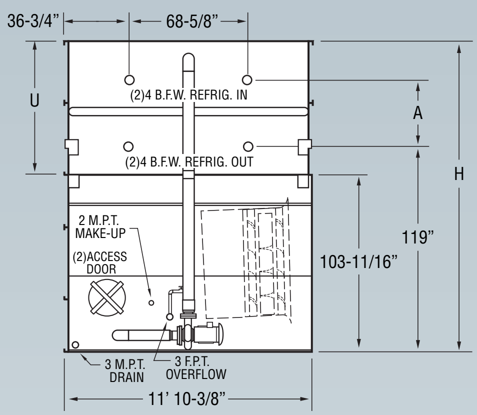
*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R-22 and 1.98 for R-134a.

Dimensions are subject to change. Do not use for pre-fabrication.

†† **These units are available for Ammonia applications only.**

Engineering & Dimensions Data

PMC-840E-1g to 1261E-1g



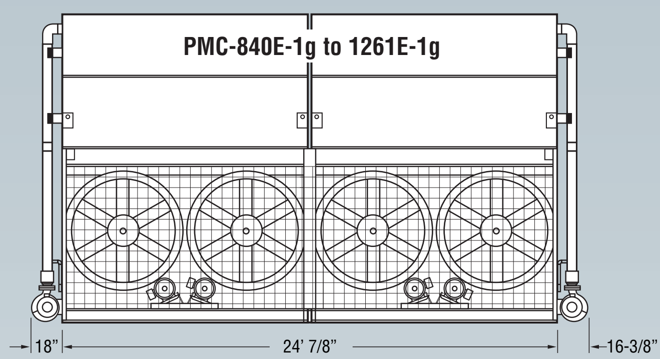


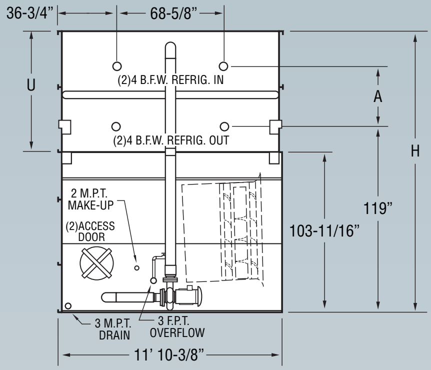
Table 11 Engineering Data

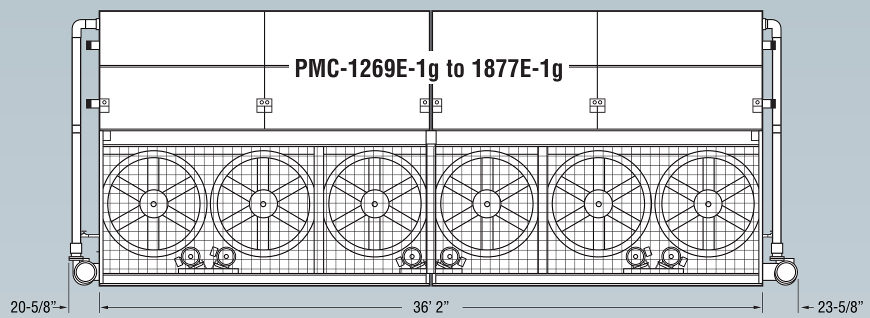
Model No.	R-717 Capacity Tons*	Fans		Weights (lbs)†			Refrigerant Operating Charge lbs.***	Coil Volume ft^3	Spray Pump		Remote Sump			Dimensions (in.)		
		HP	CFM	Shipping	Heaviest Section†	Operating			HP	GPM	Gallons Req'd**	Conn. Size	Operating Weight	Height H	Upper U	Coil A
PMC-840E-1g	596	(4)7.5	158,400	29,410	10,130††	39,780	610	83	(2)5	1600	1080	14	36,980	163-3/8	61	22-1/4
PMC-900E-1g	638	(4)10	169,000	29,480	10,200††	39,850	610	83	(2)5	1600	1080	14	37,050	163-3/8	61	22-1/4
PMC-956E-1g	678	(4)7.5	154,000	39,190	14,530	49,950	995	135	(2)5	1600	1080	14	47,150	180-3/8	78	39-1/4
PMC-976E-1g	692	(4)10	166,500	34,500	12,150	45,070	800	109	(2)5	1600	1080	14	42,270	171-7/8	69-1/2	30-3/4
PMC-989E-1g	701	(4)15	194,200	30,000	10,720††	40,370	610	83	(2)5	1600	1080	14	37,570	163-3/8	61	22-1/4
PMC-1024E-1g	726	(4)10	164,000	39,260	14,530	50,020	995	135	(2)5	1600	1080	14	47,220	180-3/8	78	39-1/4
PMC-1073E-1g	761	(4)15	191,300	35,020	12,150	45,590	800	109	(2)5	1600	1080	14	42,790	171-7/8	69-1/2	30-3/4
PMC-1117E-1g	792	(4)20	197,400	35,270	12,150	45,840	800	109	(2)5	1600	1080	14	43,040	171-7/8	69-1/2	30-3/4
PMC-1127E-1g	799	(4)15	188,800	39,780	14,530	50,540	995	135	(2)5	1600	1080	14	47,740	180-3/8	78	39-1/4
PMC-1182E-1g	838	(4)15	185,700	44,440	16,860	55,390	1185	161	(2)5	1600	1080	14	52,590	188-7/8	86-1/2	47-3/4
PMC-1203E-1g	853	(4)20	200,500	40,030	14,530	50,790	995	135	(2)5	1600	1080	14	47,990	180-3/8	78	39-1/4
PMC-1261E-1g	894	(4)20	197,600	44,690	16,860	55,640	1185	161	(2)5	1600	1080	14	52,840	188-7/8	86-1/2	47-3/4

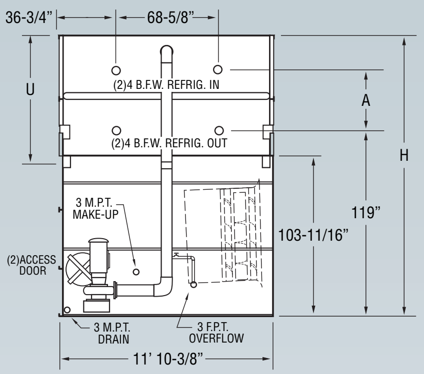
* Tons at standard conditions: 96.3°F condensing, 20°F suction and 78°F W.B.
** Gallons shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation. (12” would normally be sufficient.)
† Heaviest section is the upper coil section. **When 5.12 seismic design is required consult the factory for specific weights.**
†† Heaviest section is the lower basin section.
*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R-22 and 1.98 for R-134a.
Dimensions are subject to change. Do not use for pre-fabrication.

Engineering & Dimensions Data

PMC-1269E-1g to 1985E-1g







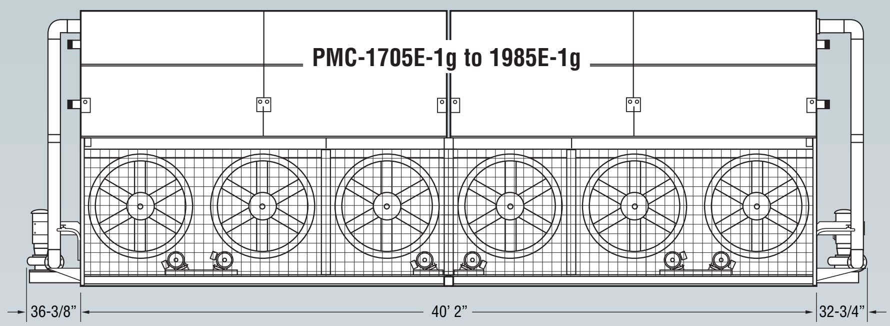


Table 12 Engineering Data

Model No.	R-717 Capacity Tons*	Fans		Weights (lbs)†			Refrigerant Operating Charge lbs.***	Coil Volume ft^3	Spray Pump		Remote Sump			Dimensions (in.)		
		HP	CFM	Shipping	Heaviest Section†	Operating			HP	GPM	Gallons Req'd**	Conn. Size	Operating Weight	Height H	Upper U	Coil A
PMC-1269E-1g	900	(6)7.5	236,800	43,770	14,750††	59,180	905	123	(2)7.5	2400	1460	16	53,530	163-3/8	61	22-1/4
PMC-1358E-1g	963	(6)10	252,600	43,860	14,840††	59,270	905	123	(2)7.5	2400	1460	16	53,620	163-3/8	61	22-1/4
PMC-1376E-1g	976	(6)7.5	233,300	51,170	18,210	66,870	1190	163	(2)7.5	2400	1460	16	61,220	171-7/8	69-1/2	30-3/4
PMC-1446E-1g	1026	(6)7.5	230,300	58,330	21,790	74,320	1480	202	(2)7.5	2400	1460	16	68,660	180-3/8	78	39-1/4
PMC-1473E-1g	1045	(6)10	248,900	51,260	18,210	66,960	1190	163	(2)7.5	2400	1460	16	61,310	171-7/8	69-1/2	30-3/4
PMC-1549E-1g	1099	(6)10	245,200	58,420	21,790	74,410	1480	202	(2)7.5	2400	1460	16	68,750	180-3/8	78	39-1/4
PMC-1599E-1g	1134	(6)15	286,000	52,050	18,210	67,750	1190	163	(2)7.5	2400	1460	16	62,100	171-7/8	69-1/2	30-3/4
PMC-1625E-1g	1152	(6)10	241,600	65,120	25,140	81,400	1770	241	(2)7.5	2400	1460	16	75,740	188-7/8	86-1/2	30-3/4
PMC-1712E-1g	1214	(6)15	282,300	59,210	21,790	75,200	1480	202	(2) 7.5	2400	1460	16	69,540	180 3/8	78	39-1/4
PMC-1776E-1g	1260	(6)15	277,600	65,910	25,140	82,190	1770	241	(2) 7.5	2400	1460	16	76,530	188 7/8	86-1/2	47-3/4
PMC-1788E-1g	1268	(6)20	299,800	59,590	21,790	75,580	1480	202	(2)7.5	2400	1460	16	69,920	180-3/8	78	39-1/4
PMC-1877E-1g	1331	(6)20	295,400	66,290	25,140	82,570	1770	241	(2)7.5	2400	1460	16	76,910	188-7/8	86-1/2	47-3/4
PMC-1705E-1g	1209	(6)10	256,100	72,920	28,390	90,850	1965	268	(2)10	2800	1630	16	84,620	188-7/8	86-1/2	47-3/4
PMC-1879E-1g	1333	(6)15	294,300	73,710	28,390	91,640	1965	268	(2)10	2800	1630	16	85,410	188-7/8	86-1/2	47-3/4
PMC-1985E-1g	1408	(6)20	313,100	74,090	28,390	92,020	1965	268	(2)10	2800	1630	16	85,790	188-7/8	86-1/2	47-3/4

* Tons at standard conditions: 96.3°F condensing, 20°F suction and 78°F W.B.

** Gallons shown is water in suspension in unit and piping. Allow for additional water in bottom of remote sump to cover pump suction and strainer during operation. (12" would normally be sufficient.)

† Heaviest section is the upper coil section. **When 5.12 seismic design is required consult the factory for specific weights.**

†† Heaviest section is the lower basin section.

*** Refrigerant charge is shown for R-717. Multiply by 1.93 for R-22 and 1.98 for R-134a.

Dimensions are subject to change. Do not use for pre-fabrication.

Optional Equipment

Oversized Access Door

For enhanced basin accessibility, the Oversized Access Door option enables maintenance personnel to quickly and easily enter the basin for float valve adjustment and unit inspection.

Self Supporting Service Platforms

Condensers are available with self-supporting service platforms that include access ladders which are designed for easy field installation. This option offers significant savings in comparison to field constructed, externally supported catwalks. The Evapco service platform option may be installed on either side, or the end opposite the connections.

Two Speed Motors

Two speed fan motors can provide an excellent means of capacity control. In periods of lightened loads or reduced wet bulb temperatures, the fans can operate at low speed, which will provide about 60% of full speed capacity, yet consume only about 15% of the power compared with high speed. In addition to the energy savings, the sound levels of the units will be greatly reduced at low speed.

Remote Sump Configuration

For units operating in areas where temperatures may be very low, or where low temperatures may occur during periods when the unit is not operating, a sump located inside the building is the preferred means of ensuring that the basin water will not freeze. For these applications, the condenser will be supplied without the spray pump, suction strainers and all associated piping, but with an oversize bottom outlet.

Electric Water Level Control

Evaporative condensers may be ordered with an electric water level control in lieu of the standard mechanical float and make-up assembly. This package provides accurate control of water levels and does not require field adjustment.

Water Level Indicator

Condensers may be supplied with a water level indicator to provide a visual indication of basin water level without opening access doors or air inlet louvers. The level indicator can be furnished with an optional low and high level alarm switches or a transmitter for continuous level monitoring.

Super-Low Sound Fan

Evapco's Super Low Sound Fan utilizes an extremely wide chord blade design and is ideal for low energy, sound sensitive installations without sacrificing thermal performance. This revolutionary technology is one-piece molded, heavy duty fiberglass reinforced polyester hub and blade construction utilizing a forward swept blade design. The Super Low Sound Fan is capable of reducing the unit sound pressure levels 10 dB(A) to 13 dB(A) depending on specific unit selection and measurement location.

Super Low Sound Fan

ASME Coils

Evaporative condensers can be furnished with condensing coils manufactured in accordance with the ASME Pressure Vessel Code Section VIII, Division I. Coils built with this option will bear a U-stamp indicating their compliance with the ASME code.

TITAN Coils – Stainless Steel Construction

EVAPCO offers the option of Type 304L stainless steel construction using the Thermal Pak® II coil design. Highly efficient heat transfer coils with the ultimate corrosion protection.

Multiple Circuit Coils

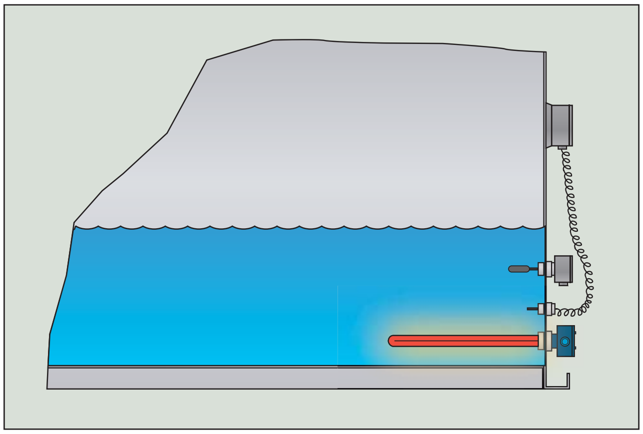
Condensers may be supplied with multiple circuit coils to match various system requirements such as split systems, or if a glycol or water circuit is desired for compressor head cooling.

Basin Heater Package

If a remote sump configuration is not practical, electric basin heater packages are available to help prevent freeze-up of the basin water. The packages include electric heater elements, and a combination thermostat/low water cutoff. **Note: External pumps should be heat traced and insulated in the field to prevent freezing.**

Electric Heaters

Electric immersion heaters are available factory installed in the basin of the condenser. They are sized to maintain a +40° F pan water temperature with the fans off and an ambient air temperature of 0°F, -20°F, or -40°F. They are furnished with a combination thermostat/low water protection device to cycle the heater on when required and to prevent the heater elements from energizing unless they are completely submerged. All components are in weather proof enclosures for outdoor use. The heater power contactors and electric wiring are not included as standard.



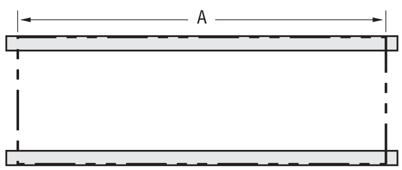
PMC-E Heater Sizes

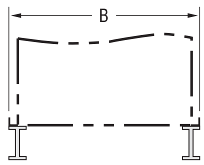
Models	0°F	-20°F	-40°F
PMC-175E-1g to PMC-240E-1g	5	7	9
PMC-250E-1g to PMC-375E-1g	(2) 4	(2) 5	(2) 7
PMC-332E-1g to PMC-519E-1g	8	12	16
PMC-503E-1g to PMC-778E-1g	(2) 6	(2) 9	(2) 12
PMC-772E-1g to PMC-1038E-1g	(2) 8	(2) 12	(2) 15
PMC-1006E-1g to PMC-1556E-1g	(2) 12	(4) 9	(4) 12
PMC-420E-1g to PMC-631E-1g	10	15	20
PMC-634E-1g to PMC-939E-1g	(2) 7	(2) 12	(2) 15
PMC-811E-1g to PMC-992E-1g	(2) 8	(2) 12	(2) 15
PMC-974E-1g to PMC-1258E-1g	(2) 9	(2) 15	(2) 18
PMC-840E-1g to PMC-1261E-1g	(2) 9	(2) 15	(2) 18
PMC-1269E-1g to PMC-1877E-1g	(2) 15	(4) 10	(4) 15
PMC-1705E-1g to PMC-1985E-1g	(2) 15	(4) 12	(4) 15

Steel Support

The recommended support for EVAPCO condensers is structural "I" beams located under the outer flanges and running the entire length of the unit. Mounting holes, 3/4" in diameter are located in the bottom channels of the pan section to provide for bolting to the structural steel. (Refer to certified drawings from the factory for bolt hole locations.)

Beams should be level to within 1/8" in 6' before setting the unit in place. Do not level the unit by shimming between it and the "I" beams as this will not provide proper longitudinal support.





PMC-E Dimensions

5' Wide Models	A	B
PMC-175E-1g to 240E-1g	11' 11-5/8"	6' 4"
250E-1g to 375E-1g	18' 1/8"	6' 4"
10' Wide Models	**A**	**B**
PMC-332E-1g to 519E-1g	11' 11-3/4"	9' 9-3/4"
503E-1g to 778E-1g	18' 1/8"	9' 9-3/4"
772E-1g to 1038E-1g	24' 7/8"	9' 9-3/4"
1006E-1g to 1556E-1g	36' 2"	9' 9-3/4"
12' Wide Models	**A**	**B**
PMC-420E-1g to 631E-1g	11' 11-3/4"	11' 10-3/8"
634E-1g to 939E-1g	18' 1/8"	11' 10-3/8"
811E-1g to 992E-1g	20' 1/4"	11' 10-3/8"
974E-1g to 1258E-1g	24' 7/8"	11' 10-3/8"
840E-1g to 1261E-1g	24' 7/8"	11' 10-3/8"
1269E-1g to 1877E-1g	36' 2"	11' 10-3/8"
1705E-1g to 1985E-1g	40' 2"	11' 10-3/8"

Design

EVAPCO units are heavy-duty construction and designed for long trouble-free operation. Proper equipment selection, installation and maintenance is, however, necessary to ensure good unit performance. Some of the major considerations in the application of a condenser are presented below. For additional information, contact the factory.

Air Circulation

In reviewing the system design and unit location, it is important that proper air circulation be provided. The best location is on an unobstructed roof top or on ground level away from walls and other barriers. Care must be taken when locating condensers in wells or enclosures or next to high walls. The potential for recirculation of hot, moist discharge air back into the fan intake exists. Recirculation raises the wet bulb temperature of the entering air causing the condensing pressure to rise above the design. For these cases, a discharge hood or ductwork should be provided to raise the overall unit height even with the adjacent wall, thereby reducing the chance of recirculation. Good engineering practice dictates that the evaporative condenser's discharge air not be directed or located close to or in the vicinity of building air intakes. Engineering assistance is available from the factory to identify potential recirculation problems and recommend solutions.

For additional information regarding layout of evaporative condensers, see EVAPCO Bulletin entitled ***"Equipment Layout".***

Piping

Condenser piping should be designed and installed in accordance with generally accepted engineering practice. All piping should be anchored by properly designed hangers and supports with allowance made for possible expansion and contraction. No external loads should be placed upon condenser connections, nor should any of the pipe supports be anchored to the unit framework. For additional information concerning refrigerant pipe sizing and layout, see EVAPCO Bulletin entitled ***"Piping Evaporative Condensers"***.

Super Low Sound Fan

Evapco's Super Low Sound Fan on the ATC-E Condenser utilizes an extremely wide chord blade design available for sound sensitive applications where the lowest sound levels are desired. The fan is one pieces molded heavy duty FRP construction utilizing a forward swept blade design. The Super Low Sound Fan reduces sound levels 10 to 13 dB(A) compared to the standard ATC-E Fan. In combination with Water Silencers, the ATC-E can produce the lowest sound levels commercially available. For a detailed analysis, please contact your EVAPCO Sales Representative.

Maintaining the Recirculated Water System

The heat rejection in a condenser is accomplished by the evaporation of a portion of the recirculated spray water. As this water evaporates, it leaves behind all of its mineral content and impurities. Therefore, it is important to bleed-off an amount of water equal to that which is evaporated to prevent the build-up of these impurities. If this is not done, the mineral or the acidic nature of the water will continue to increase. This will ultimately result in heavy scaling or a corrosive condition.

Bleed-off

Each unit supplied with a pump mounted on the side is furnished with a clear bleed line for visual inspection and a valve which, when fully open, will bleed-off the proper amount of water. If the make-up water supplying the unit is relatively free of impurities, it may be possible to cut back the bleed, but the unit must be checked frequently to make sure scale is not forming. Make-up water pressure should be maintained between 20 and 50 psig.

Water Treatment

In some cases the make-up will be so high in mineral content that a normal bleed-off will not prevent scaling. In this case water treatment will be required and a reputable water treatment company familiar with the local water conditions should be consulted.

Any chemical water treatment used must be compatible with the construction of the unit. If acid is used for treatment, it should be accurately metered and the concentration properly controlled. The pH of the water should be maintained between 6.5 and 8.0. **Units constructed of galvanized steel operating with circulating water having a pH of 8.3 or higher will require periodic passivation of the galvanized steel to prevent the formation of "white rust".** Batch chemical feeding is not recommended because it does not afford the proper degree of control. If acid cleaning is required extreme caution must be exercised and only inhibited acids recommended for use with galvanized construction should be used. **For more information see EVAPCO Bulletin entitled *"Maintenance Instructions"***.

Control of Biological Contamination

Water quality should be checked regularly for biological contamination, If biological contamination is detected, a more aggressive water treatment and mechanical cleaning program should be undertaken. The water treatment program should be performed in conjunction with a qualified water treatment company. It is important that all internal surfaces be kept clean of accumulated dirt and sludge. In addition, the drift eliminators should be maintained in good operating condition.

Mechanical Specifications

Furnish and install, as shown on the plans, an EVAPCO model _____________ evaporative condenser. Each unit shall have condensing capacity of _________ BTUH heat rejection, operating with ____________ refrigerant at _____ °F condensing temperature and _____ °F design wet bulb temperature.

IBC 2006 Compliance

The condenser shall be designed and constructed to meet the International Building Code (IBC 2006) specifications for installed components per ASCE 7-05. The manufacturer shall provide a certificate of compliance to demonstrate that the equipment/unit has been independently tested and certified in accordance with the IBC program.

Pan and Casing

The pan and casing shall be constructed of G-235 hot-dip galvanized steel for long life and durability. The heat transfer section shall be removable from the pan to provide easy handling and rigging.

The pan/fan section shall include fans, motors and drives mounted and aligned at the factory. These items shall be located in the dry entering air stream to provide maximum service life and easy maintenaince. The pan bottom shall be sloped to the drain to ensure easy draining and to facilitate cleaning. Standard pan accessories shall include circular access doors, stainless steel strainers, wastewater bleed line with adjustable valve and brass makeup valve, with an unsinkable foam filled plastic float.

Power-Mizer Fan Drives

Fans shall be vane-axial type constructed of cast aluminum alloy blades. They shall be arranged in a two-stage system installed in a closely fitted cowl with venturi air inlet and air stabilizing vanes. Fan shaft bearings shall be a heavy-duty self aligning ball type with grease fittings extended to the outside of the unit.

The fan drive shall be solid backed Power-Band constructed of neoprene with polyester cords designed for 150% of motor nameplate horsepower. Drives are to be mounted and aligned at the factory.
Each fan shall be driven individually by a dedicated fan motor. Fan motors may be cycled independently without harmful moist air bypass.

Fan Motor

_________ horsepower totally enclosed fan cooled motor(s) with 1.15 service factor shall be furnished suitable for outdoor service on _________ volts, _________ hertz, and _________ phase. Motor(s) shall be mounted on an adjustable base.

Heat Transfer Coil

The coil(s) shall be all prime surface steel, encased in steel framework with the entire assembly hot-dip galvanized after fabrication. Coil(s) shall be designed with sloping tubes for free drainage of liquid refrigerant and tested to 400 psig air pressure under water.

Water Distribution System

The system shall provide a water flow rate of 6 GPM over each square foot of the unit face area to ensure proper flooding of the coil. The spray header shall be constructed of schedule 40, PVC pipe for corrosion resistance. All spray branches shall be removable and include a threaded end plug for cleaning. The water shall be distributed over the entire coil surface by heavy-duty ABS spray nozzles with large 1-1/4" diameter opening and internal sludge ring to eliminate clogging. Nozzles shall be threaded into a spray header to provide easy removal for maintenance.

Water Recirculation Pump

The pump(s) shall be a close-coupled, centrifugal type with mechanical seal, installed at the factory. _________ horsepower totally enclosed, motor shall be furnished suitable for outdoor service on _________ volts, _________ hertz, and _________ phase.

Eliminators

The eliminators shall be constructed entirely of inert polyvinyl chloride (PVC) in easily handled sections. The eliminator design shall incorporate three changes in air direction to assure complete removal of all entrained moisture from the discharge air stream. Maximum drift rate shall be less than 0.001% of the circulating water rate.

Finish

All pan and casing materials shall be constructed of G-235 heavy gauge mill hot-dip galvanized steel for maximum protection against corrosion. During fabrication, all panel edges shall be coated with 95% pure zinc-rich compound.

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