

EXM IQ series air conditioner advantages

By listening to the demands of the electronics and electrical industries, EXM has developed modern closed-loop cooling systems to compliment today's highly engineered workstations.

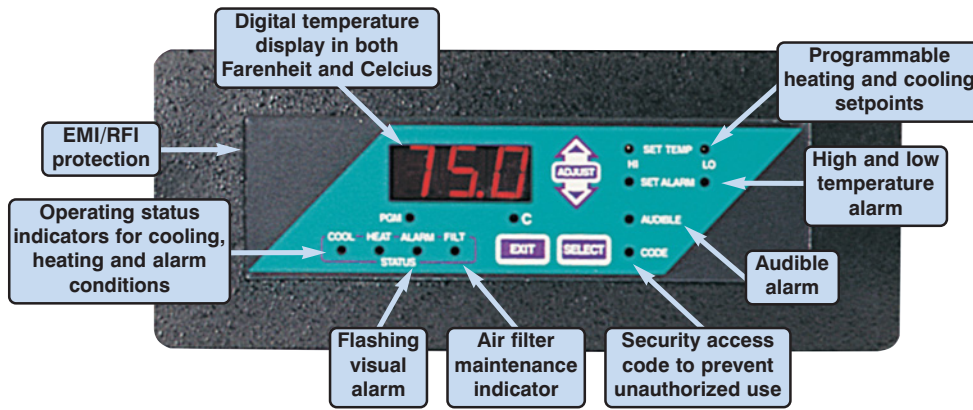
The IQ series design features include a rugged 16 GA welded steel, dent resistant cabinet construction which is up to 45% lighter in weight, for easy installa-

tion. Features also include an increase in operating efficiency up to 35%, a space-saving aesthetic cabinet design, up to 40% thinner, saving valuable factory floor space.

A multi-function programmable digital controller is also standard on every unit, at no extra cost. Vertical mount air conditioners also include a standard, built-in condensate evaporator.

In addition, remote control readout and central computer control monitoring are optionally available for a more effective thermal management solution for monitoring electronic enclosure thermal conditions, even in those situations when visual readouts and audible alarms are not convenient to the operator.

UL, cUL, CE.



Thermal Management Center – Optional

LCD Display, Ethernet Communications Link and All the Features of the Standard Digital Controller

PLUS

- LCD Message Center
- Expanded Temperature and Alarm Ranges
- Improved Functionality
- Ethernet Communications Link - Optional



Standard Cooling System Features



- Up to 35% more efficient
- Up to 40% savings in space
- Up to 45% lighter in weight

- CFC Free refrigeration system
- Rugged, lightweight, dent resistant welded steel cabinet construction
- Maintenance free permanently lubricated blowers
- Efficient, quiet, long lasting rotary compressor
- Built-in condensate evaporation package on vertical mount air conditioners.
- 100% factory tested
- Models available with top and bottom cold air discharge.
- **Units available from 1000 to 20000 BTUH**
- **Vertical mount and top mount**

units available

- All EXM air conditioners use PermaCool™ electrostatic filter-media to keep dust and other industrial residues from clogging the condenser air passages. The filter material is a durable ¼" corrugated polypropylene media with 10 micron filtration which retains a low resistance to airflow. The filter will withstand harsh factory environments and will not degrade over time. Simple washing or vacuuming is all that is necessary to maintain the filter media over an indefinite period of time.

Data subject to change without notice.

Cooling system sizing calculation

The following calculations have been developed to determine the cooling requirements for standard uninsulated metal NEMA rated enclosures for indoor applications.

Determine your cooling requirements by completing the following calculations or contact your EXM sales representative at 1-800-363-2423 or e-mail info@exmweb.com.

Please note: This formula is supplied for reference purposes only. EXM offers no warranty, expressed nor implied, as to the application of this formula, as the equipment may be subjected to conditions out of our control.

Sizing Parameters

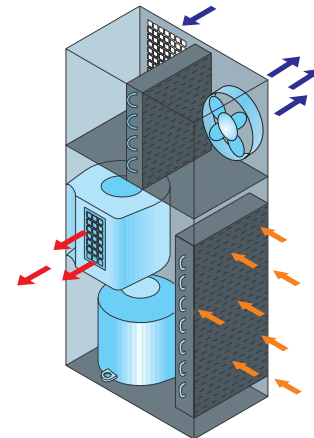
- Watts** = Heat energy produced by electronic equipment
- Surface area** = Surface area of the enclosure that will allow heat transfer (in sq.ft.)

$$\frac{(H \times W) \times 2 + (H \times D) \times 2 + (W \times D) \times 2}{144 \text{ sq. in.}}$$
** Eliminates surface not allowing heat transfer*
- ΔT = Difference between the maximum temperature outside the enclosure and the desired maximum temperature inside the enclosure.



Calculations

- Step 1** = Determine the Internal Heat Dissipation of the enclosed equipment in BTU.
BTU per hour = Watts x 3.413
- Step 2** = Determine External Heat Transfer.
BTU per hour = Surface Area x 1.25 x ΔT
- Note** = The enclosure internal temperature must be at least 5°F higher than the ambient temperature to select a heat exchanger. This will result in a negative BTU per hour in step 2.
- Step 3** = Determine the Required Cooling Capacity in BTU per hour.
BTU per Hour = Sum of Step 1 and Step 2. x 1.1 Safety Factor



Air conditioner selection : Determine the required cooling capacity in BTU per hour.
BTU per hour = (The sum of Step 1 and Step 2) x 1.1 safety factor
 Select the EXM air conditioner that meets or exceeds the cooling capacity in BTU per hour.

Heat exchanger selection: **Watts per °F = (The sum of Step 1 and Step 2) x 1.1 safety factor (Max. internal temp. - Max. outside temp.) x 3.413**
 Select the heat exchanger that meets or exceeds the required cooling capacity in Watts per °F.

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For assistance, please call EXM at 1-800-363-2423.

