

**APPLICATION:** How to perform a wide variety of single steady state tests within a limited temperature/humidity range when excellent stability, reliability and accuracy are required.

**OPERATING AND CONTROL CHARACTERISTICS**

**TEMPERATURE RANGE**

+3°C. to +93°C. (+200°F.)

**RELATIVE HUMIDITY RANGE**

See Chart I-478-8.

**STABILIZATION TIME**

+25°C. to +93°C.: 1½ hours (approx.)

+93°C to +25°C.: 1½ hours (approx.)

**STABILITY**

(Over 24 hr. period)

Temperature: ±¼°C.

Relative Humidity: ±1%.

**RECOVERY TIME**

Average recovery of stabilized temperature and relative humidity when door is opened 5 minutes or less: 45 minutes at +65°C.

**DUTY RATING**

Continuous.

Meets MIL-202D, Method 103B including Condition D—continuous operation for 1344 hours . . . 56 days!

**SOLUTION:**

**BLUE M SINGLE STEADY STATE TEMPERATURE/HUMIDITY CABINETS**

with Dual Wet and Dry Bulb **POWER-O-MATIC-60** Saturable Reactor Control Systems and Separate Monitoring Recorder.

These Mechanical Convection, Vertical Air-Flow Cabinets meet all the requirements for stable, reliable and accurate steady state testing within the range shown in the chart on the opposite page. They are recommended for continuous duty testing of small, low volume components which do not dissipate any substantial amounts of heat, for steady state MIL tests, paint sample testing, and water vapor transmission.

In keeping with their restricted service requirements, these units feature relatively inexpensive construction, low K.W. rating, and a low volume blower system—features which do not hinder their efficiency within their limited range, but which keep their cost low. They also feature a built-in, self-contained refrigeration system for sub-ambient testing which avoids the use of tap water cooling, a drawback in certain areas of the country.

Similar units with POWER-O-MATIC 60 cam-type programming are described elsewhere in this section.

**GENERAL SPECIFICATIONS**

**CONTROL SYSTEM**

**POWER-O-MATIC 60** Dual Saturable Reactor Proportioning Control Systems.

**MAX-SET™ OVERTEMPERATURE PROTECTION**

**SEPARATE MONITORING RECORDER**—2 pen, wet and dry bulb, 24 hour chart drive. Range to suit cabinet. Not connected electrically or mechanically to control system. Monitors and provides records only. 100-12" diameter charts, pens and all accessories included. Mounted on hinged door on side of unit.

**REFRIGERATION COMPRESSOR SWITCH**

**REFRIGERATION PRESSURE GAUGES**

**AUTOMATIC ELECTRONIC WATER LEVELER**

**ELAPSED TIME METER**

**VOLTMETERS**

**MAIN SWITCH**

**PILOT LIGHTS**

**CONSTRUCTION**

**HOUSING**—heli-arc welded, all polished stainless.

**INTERIOR**—type 316, 17-12 stainless. Heli-arc welded and passivated. Removable parts electro-polished.

**EXTERIOR**—type 304, 18-8 stainless.

**INSULATION**—Fiberglas.

**HARDWARE**—exclusive adjustable no-slam, cam action latch and chrome-plated hinges.

**DOOR(S)**—same construction and insulation as cabinet. Largest unit has two doors but no center mullion. Silicone rubber seal.

**INNER GLASS DOOR**—stainless framing, latches and fittings. Heavy plate tempered glass viewing area approximates chamber I.D. Silicone rubber seal.

**SHELVES**—two, adjustable every 2". Electro-polished stainless, wire type.

**CABINET FLOOR STAND**—heavy gauge cold rolled steel. Grey enamel finish. Houses mechanical refrigeration system.

**MECHANICAL REFRIGERATION**—dual cooling system, non-cycling. Copeland hermetic type using refrigerant 12. Ample capacity for cabinet.

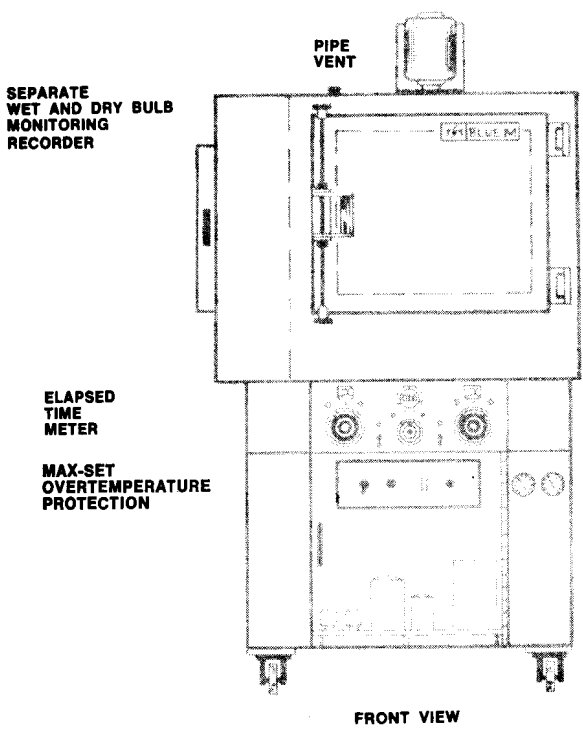
**VAPOR PRESSURE SYSTEM**—in lieu of atomizing spray. No wet bulb control wicks to change.

**WATER FLOW AND LEVEL SYSTEM**—quality "Y" type strainer, pressure regulator valve, flow control solenoid valves and electronic water leveler to meter water exactly on long-term basis. Unique



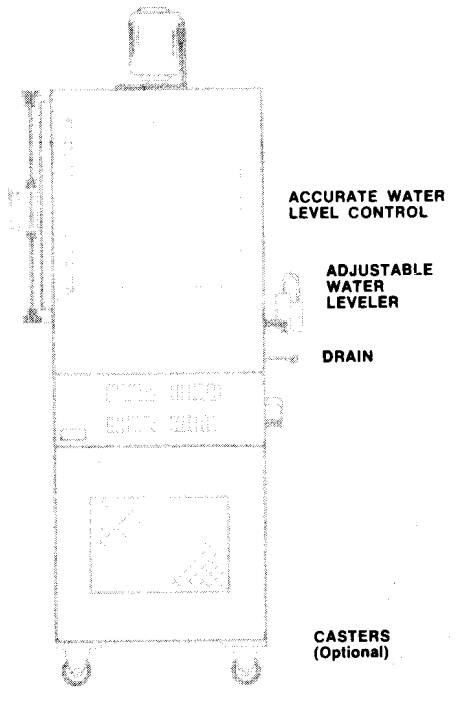
A BLUE M

**STANDARD**



FRONT VIEW

- STAINLESS HOUSING AND INTERIOR HELI-ARC WELDED
- MECHANICAL VERTICAL AIR-FLOW
- INNER GLASS DOOR
- LEAD-IN PORT
- BLUE M POWER-O-MATIC 60 SEPARATE WET AND DRY BULB SATURABLE REACTOR PROPORTIONING CONTROL SYSTEMS
- VAPOR PRESSURE SYSTEM
- REFRIGERATION PRESSURE GAUGES
- MECHANICAL REFRIGERATION-DUAL COMPRESSOR SYSTEM



SIDE VIEW

stainless gravity water leveler accurately and visibly provides required level; overflow outlet. No needle or float valves. Nominal water use.

**WET BULB RECORDER WICK CONTAINER**—½ gallon bottle in stainless rack. Gravity feed provides wick with distilled water.

**LEAD-IN PORT**

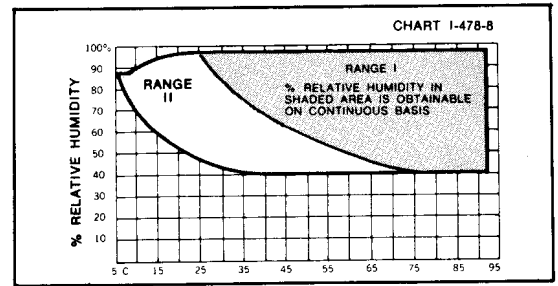
**OPERATION**

Set controls for desired operating conditions. In controlling relative humidity, specific water reservoir dew point temperature is maintained by continuously operating submerged cooling coil and wet bulb heating element. The exact temperature is maintained by the wet bulb control bulb which senses water temperature and meters proper voltage to the heaters through the wet bulb POWER-O-MATIC 60 Control System.

In controlling chamber temperature, air, withdrawn from chamber by blower wheel, is propelled across water surface for chilling and saturation to proper dew point temperature. It then passes over dry bulb heaters, is heated to set dry bulb temperature, and discharged into working area. Heaters are controlled by the dry bulb POWER-O-MATIC 60 Control System. Temperature and humidity are controlled, sensed and recorded by separate instrument to meet any condition shown on chart.

**DRY BULB TEMPERATURE (DEGREES CENTIGRADE)**

NOTE: Control of ±½°C. and ±1% R.H. in Range I; Control of ±1°C. and ±2% R.H. in Range II.



**GENERAL SPECIFICATIONS**

Model Number	Inside Dimensions (Inches)			Overall Dimensions (Inches)			Total KVA	Voltage 60Hz. A.C.	Cubic Feet Cap.
	W.	D.	H.	W.	D.	H.			
CFR-7552C	20	14	20	38	34	81	5.2	240V./1 Ph.	3.2
CFR-7652C	25	19	20	43	39	81	5.5	240V./1 Ph.	5.5
CFR-7752C	37	19	25	55	39	81	6.3	240V./1 Ph.	10.0

All wiring complete and enclosed to meet N.E. Code, as amended.

**UNIQUE WARRANTY/GUARANTEE**

Electrical Control Components, including controls proper, reactors, switches, voltmeters, etc.: unconditionally guaranteed for 3 years. All other parts unconditionally guaranteed for 1 year.

**OPTIONAL ACCESSORIES AVAILABLE INCLUDE:** EXTRA CHARTS, EXTRA SHELVES, ELECTRICAL TERMINALS, LEAD-IN PORTS, CRYSTAL-CLEAR WATER PURIFICATION SYSTEM, EXTRA DEMINERALIZING CARTRIDGES, INTERIOR LIGHT AND SWITCH, NEOPRENE RUBBER GLOVES AND/OR PORTS/PLUGS FOR INNER GLASS DOOR, LOCKING CASTERS, HUMID-PAC ACCESSORY KIT, AND LEVELING LEGS.

**SEND FOR ADDITIONAL INFORMATION AND ALL PRICES**

**BLUE M ENGINEERING**

A SALES AND SERVICE BRANCH OF  
BLUE M ELECTRIC COMPANY  
Corporate Headquarters: Blue Island, Illinois 60406

Arizona, Scottsdale 85251  
California, El Monte 91731  
California, Sunnyvale 94086  
Georgia, Atlanta 30305

Massachusetts, Framingham 01701  
Michigan, Oak Park 48237  
New York, Elmsford 10523  
Ohio, Cincinnati 45237

Pennsylvania, Ardmore 19003  
Texas, Garland 75040