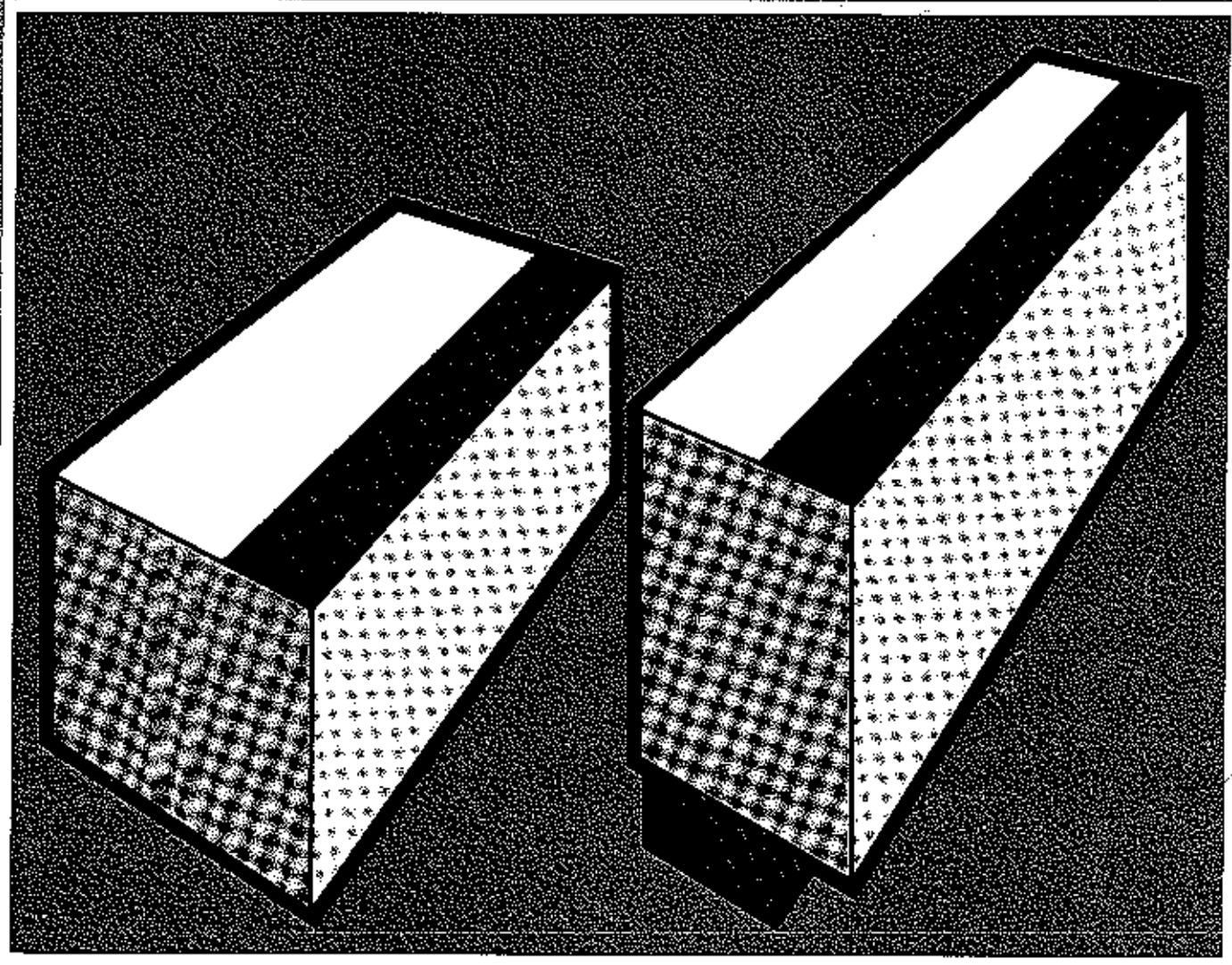


SPECIFICATIONS



Climate Master 702 SERIES

SP AND MP PACKAGED TERMINAL
AIR CONDITIONERS

Friedrich
Climate Master®

STANDARD RATINGS

702 SERIES COOLING PERFORMANCE DATA — ARI STANDARD BASIS

Model Numbers	Voltage	Cooling BTUH	Total Watts	EER Rating	Comp. R.L.A.	Comp. L.R.A.	Blower F.L.A.	Fan F.L.A.	Cooling F.L.A.	CFM High	Vent. CFM
702-07	115	7200	800	9.0	5.7	29.8	1.0	1.4	8.1	370	45
	208/230	7100 7200		8.9 9.0	2.9	15.9	.45	.70	4.05		
	265	7200		9.0	2.7	12.3	.45	.70	3.85		
702-09	115	8900	1050	8.5	7.6	40.0	1.0	1.4	10.0	370	45
	208/230	8800 8900		8.4 8.5	3.8	20.0	.45	.70	4.95		
	265	8900		8.5	3.3	16.0	.45	.70	4.45		
702-12	208/230	11800	1450	8.1	5.5	28.9	.55	.75	6.80	420	50
	265	11800		8.1	4.6	25.3	.50	.65	5.75		
702-15	208/230	14800	1825	8.1	7.7	42.0	.55	.75	9.00	420	50
	265	14800		8.1	7.4	41.3	.50	.65	8.55		

NOTE: The above based on 80°F DB/67°F WB Indoor Air—95°F DB/75°F WB Outdoor Air—High speed fan—ARI STD 310.

702 SERIES HEATING PERFORMANCE

Electric Heaters

Model	Voltage	BTUH	KW	Amps
208/230	208	7000	2.0	10.1
		10500	3.0	14.9
		13900	4.0	19.7
	230	8600	2.45	11.1
		12800	3.7	16.6
		15600	4.5	20.0
265	265	11300	3.25	12.7
		13800	3.98	15.6
		—0—	—0—	—0—

Hydronic Heaters

	Steam BTUH	Hot Water BTUH
07-09	17700	13500
12-15	18600	14300

NOTE: Above heating BTUH includes fan motor heat.
 *Based on 70°F DB EAT, 2 PSIG of Steam.
 **Based on 70°F DB EAT, 200° EWT, 190° LWT.

TOTAL WATT FACTORS

Outdoor Air °F DB	702-07-09	702-12-15
65	.870	.875
70	.890	.890
80	.935	.925
90	.980	.970
95	1.005	.980
100	1.025	1.000
105	1.050	1.020
110	1.065	1.030

Note: Above based on 80°F DB/67°F WB Indoor Air.
 High speed fan.

Note: For minimum Circuit Ampacity and maximum Fuse Size, see separate electrical data sheet.

FACTORS

COOLING CAPACITY CORRECTION FACTORS

Outdoor Temp °F DB	Return Air Entering °F WB							
	57°	59°	61°	63°	65°	67°	69°	71°
65°	.935	.975	1.025	1.070	1.115	1.160	1.205	1.250
70°	.900	.945	.990	1.035	1.080	1.130	1.170	1.220
80°	.870	.915	.955	1.000	1.040	1.080	1.125	1.170
90°	.845	.880	.920	.960	1.000	1.035	1.075	1.115
95°	.835	.855	.885	.930	.965	1.000	1.040	1.080
100°	.820	.820	.855	.895	.930	.970	1.010	1.050
105°	.810	.800	.820	.865	.900	.940	.980	1.020
110°	.800	.785	.805	.830	.870	.905	.945	.980
115°	.795	.770	.770	.805	.840	.880	.920	.955

NOTE: The above based on High Speed Fan.

SENSIBLE HEAT CORRECTION FACTORS PERCENTAGE OF TOTAL CAPACITY

Ret Air Temp °F DB	702-07 Return Air °F WB			702-09 Return Air °F WB			702-12 Return Air °F WB			702-15 Return Air °F WB		
	61°	67°	70°	61°	67°	70°	61°	67°	70°	61°	67°	70°
70°	.730	.500	.290	.700	.470	.260	.680	.450	.240	.610	.380	.265
72°	.800	.585	.385	.770	.555	.355	.750	.535	.335	.680	.465	.265
74°	.860	.660	.465	.830	.630	.435	.810	.610	.415	.740	.540	.345
76°	.890	.710	.530	.860	.680	.500	.840	.660	.480	.770	.590	.410
78°	.930	.750	.580	.900	.720	.550	.880	.700	.530	.810	.630	.460
80°	.950	.780	.630	.920	.750	.600	.900	.730	.580	.830	.660	.510
82°	.960	.820	.665	.930	.790	.635	.910	.770	.615	.840	.700	.545
84°	.965	.845	.700	.935	.815	.670	.915	.795	.650	.845	.725	.580

NOTE: The above based on High Speed Fan

SAMPLE PROBLEM

To estimate the performance of a Model 702-12 under the following conditions:

COOLING MODE: High Speed Fan, 80°F DB/61°F WB Indoor Air, 90°F DB/75°F WB Outdoor Air.

HEATING MODE: Hot Water Coil, Low Speed Fan, 70°F DB Entering Air Temperature. Supply Water at 185°F EWT at 1.5 GPM.

SAMPLE SOLUTION

COOLING

	Cooling BTUH	Sensible BTUH	Total WATTS
From Chart	11800	11800	1450
Factor	x .92	x .90	x .97
Answer	10856	10620	1407

HEATING

	Heating BTUH	LV Water Temp
From Chart	14261	179.9
Factor	.919 x .879 .839	.954 x .9305 .907
Answer	12535	167.4

.879 .9305 INTERPOLATION

HEAT PERFORMANCE

HOT WATER PERFORMANCE

Flow GPM	07-09			12-15		
	Total Capacity	LW Water Temp °F	Pressure Drop PSI	Total Capacity	LW Water Temp °F	Pressure Drop PSI
0.5	10001	157.8°	0.1	10403	156.2°	0.1
1.0	12389	173.8°	0.3	13029	172.5°	0.3
1.5	13493	181.0°	0.6	14261	179.9°	0.6
2.0	14137	185.0°	1.0	14986	184.1°	1.0
2.5	14563	187.6°	1.6	15467	186.9°	1.6
3.0	14867	189.5°	2.8	15811	188.8°	2.8
3.5	15095	190.9°	2.9	16071	190.3°	2.9

NOTE: The above is based upon 70°F DB Entering Air Temp; 200° EWT; 180° LWT—ARI STD 310

HOT WATER CORRECTION FACTORS

Entering Air Temp °F DB	Total Capacity	LW Water Temp °F	Entering Water Temp °F	Total Capacity	LW Water Temp °F
55°	1.115	.988	150°	.601	.767
60°	1.077	.992	160°	.680	.813
65°	1.038	.996	170°	.759	.860
70°	1.000	1.000	180°	.839	.907
75°	.962	1.004	190°	.919	.954
80°	.923	1.008	200°	1.000	1.000

NOTE: Based upon 200° EWT at 1.5 GPM

NOTE: Based upon 70° Enter Air Temp at 1.5 GPM

STEAM HEAT PERFORMANCE

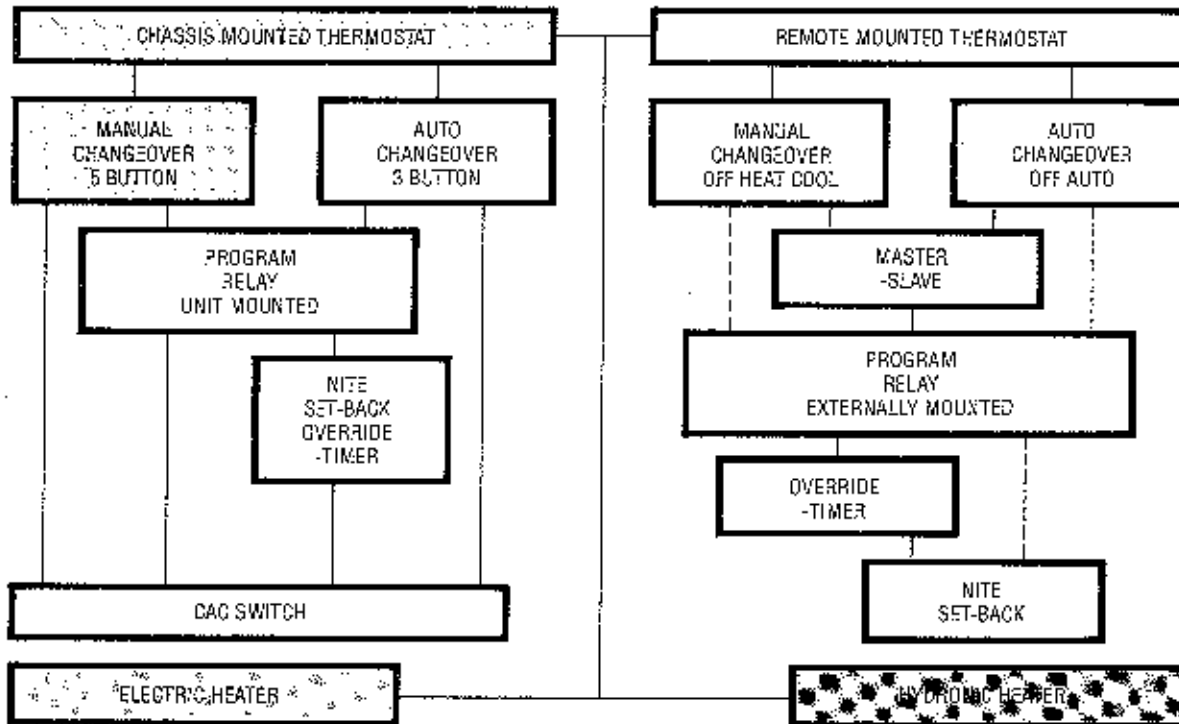
Eq. Air °F	Variable Entering Air Temp		Steam Pressure	Variable Entering Steam PSIG	
	07-09 TOT BTUH	12-15 TOT BTUH		07-09 TOT BTUH	12-15 TOT BTUH
55°	19510	20521	0	16946	17823
60°	18914	19893	1	17334	18231
65°	18318	19266	2	17700	18600
70°	17700	18600	3	18065	19000
75°	17124	18010	4	18408	19361
80°	16527	17383	5	18753	19724
			6	19047	20033
			7	19338	20339

NOTE: The above table is based upon 2 PSIG Steam.

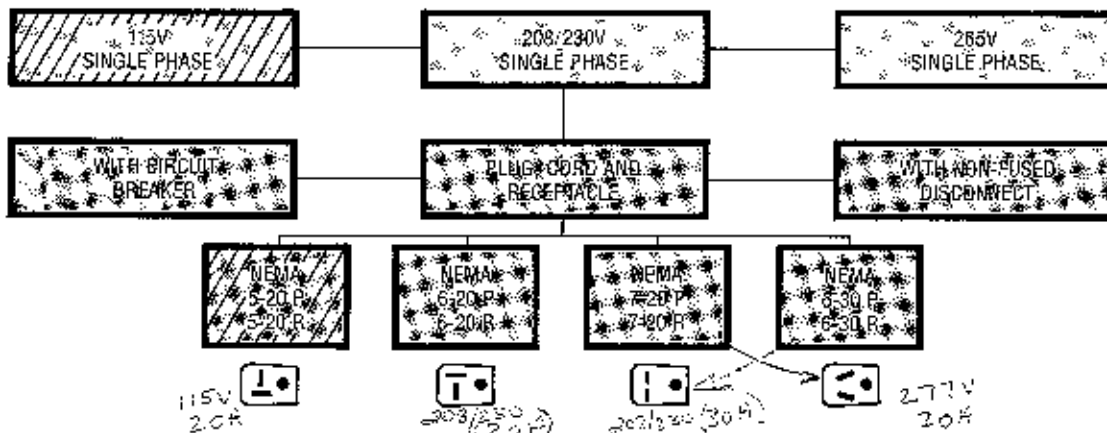
NOTE: The above table is based upon 70°F Entering Air Temperature.

OPTION FLOW CHART

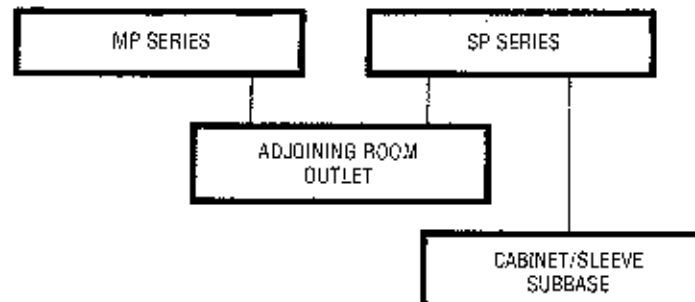
702 SERIES CONTROL OPTIONS



702 SERIES POWER OPTIONS



CABINETY OPTIONS



- MP/SP [Standard Box] STANDARD UNIT
- MP/SP [Hatched Box] 07-09 ONLY
- SP [Dotted Box] WITH OPTIONAL SUBBASE ONLY
- MP [Star Box] MP SERIES ONLY

SERIES SPECIFICATIONS

702 SERIES

PACKAGE TERMINAL AIR CONDITIONERS SP AND MP SPECIFICATIONS

All units must carry ARI Certification (per Standard 310) and UL listing via appropriate labeling. All electrical and refrigeration components shall be UL recognized devices. The manufacturer's standard warranty and unit serviceability shall be given consideration in bids. Tabulated efficiency and capacity shall be considered minimum.

CHASSIS

The chassis shall include a self-contained, hermetically sealed, air-cooled refrigeration system with factory installed electric heating element and unit controls.

All outdoor sheet metal parts shall be constructed from galvanized steel, painted electrostatically and baked to form a thermo-set coating for corrosion protection. The compressor shall be of welded hermetic design, externally isolated behind an insulated bulkhead for minimum vibration and maximum sound reduction. The compressor shall be furnished with built-in overload protection and capacitor.

The room-side blower section shall consist of two, double inlet, centrifugal blower wheels connected directly to a two-speed PSC motor with built-in overload protection. Removal of blower wheels and motor shall be made without removal of blower housings. The outdoor fan shall be made of ABS high impact plastic. This forms a multi-blade fan/slinger ring which connects directly to a separate PSC motor with built-in overload protection. Blower wheels and fan shall be statically and dynamically balanced for minimum vibration. Both motors shall be provided with oilers for relubrication. Positive removal of condensate shall be provided by evaporation on the condenser coil without drip or splash. A clear plastic condensate line that may be inspected visually will be provided from the condensate pan to the point of dispersal.

A fresh air damper shall be located between the indoor and outdoor sections to provide up to 15% outside ventilation. The evaporator and condenser coils shall be of staggered copper tubes with aluminum fins, designed for efficient air transfer and to withstand 450 PSI refrigerant working pressure. All refrigerant lines shall be copper. Refrigerant shall be controlled by a precisely designed and optimized automatic expansion valve to provide efficient performance over a wide range of operating conditions. The complete refrigerant circuit shall be checked for leaks and factory charged with Refrigerant 22.

Standard control shall contain OFF/HIGH COOL/LOW COOL/HEAT/ and VENT selections plus a self-contained adjustable thermostat with a heat anticipating, discharge feedback feature (Dual sensing type with one bulb in the entering air and one bulb in the discharge air to limit both cooling and heating temperature swings). Control components shall be isolated from the air stream. Power connections shall be field supplied to the control box.

Heating shall be provided with a factory installed and wired electric heating element containing built-in dual protection against overheating. The element shall be located under the evaporator coil to eliminate user contact.

Provisions shall be made for easy removal insertion of the chassis as one unit.

OPTIONS CONTROL

UNIT MOUNTED AUTO CHANGE-OVER The thermostat shall be a unit mounted automatic changeover type. The control box shall have three buttons consisting of OFF/ON/VENT.

PROGRAM RELAY The unit shall be provided with a relay that accepts a 24 V or 120 V signal from a central time

clock which establishes occupied/unoccupied modes. This functions with the manual (or auto) changeover unit mounted thermostat.

OVERRIDE TIMER The override operation shall be accomplished with the unit mounted manual (or auto changeover) thermostat and program relay. A zero to 2 hour timer shall override a 24 Volt signal from a central time clock which establishes occupied/unoccupied modes with a nite setback function that shall maintain a minimum space temperature of 50 Degree F.

REMOTE THERMOSTAT The unit shall be provided with a 24 Volt anticipating type wall thermostat.

A) Manual Changeover—The thermostat shall be a manual changeover type with OFF/HEAT/COOL selector switch and a FAN/AUTO selector switch.

B) Auto Changeover—The thermostat shall be an auto changeover type with a OFF/AUTO selector switch and a FAN/AUTO selector switch.

MASTER SLAVE The master-slave operation shall be accomplished with a manual (or auto) changeover remote thermostat. Additional units (slave) shall be connected to the master unit with the operation of all units dictated by a single thermostat.

PROGRAM CONTROL BOX The unit shall have a factory wired and installed program control box with a random start relay and/or override timer and/or nite setback. (Call factory for software/hardware options).

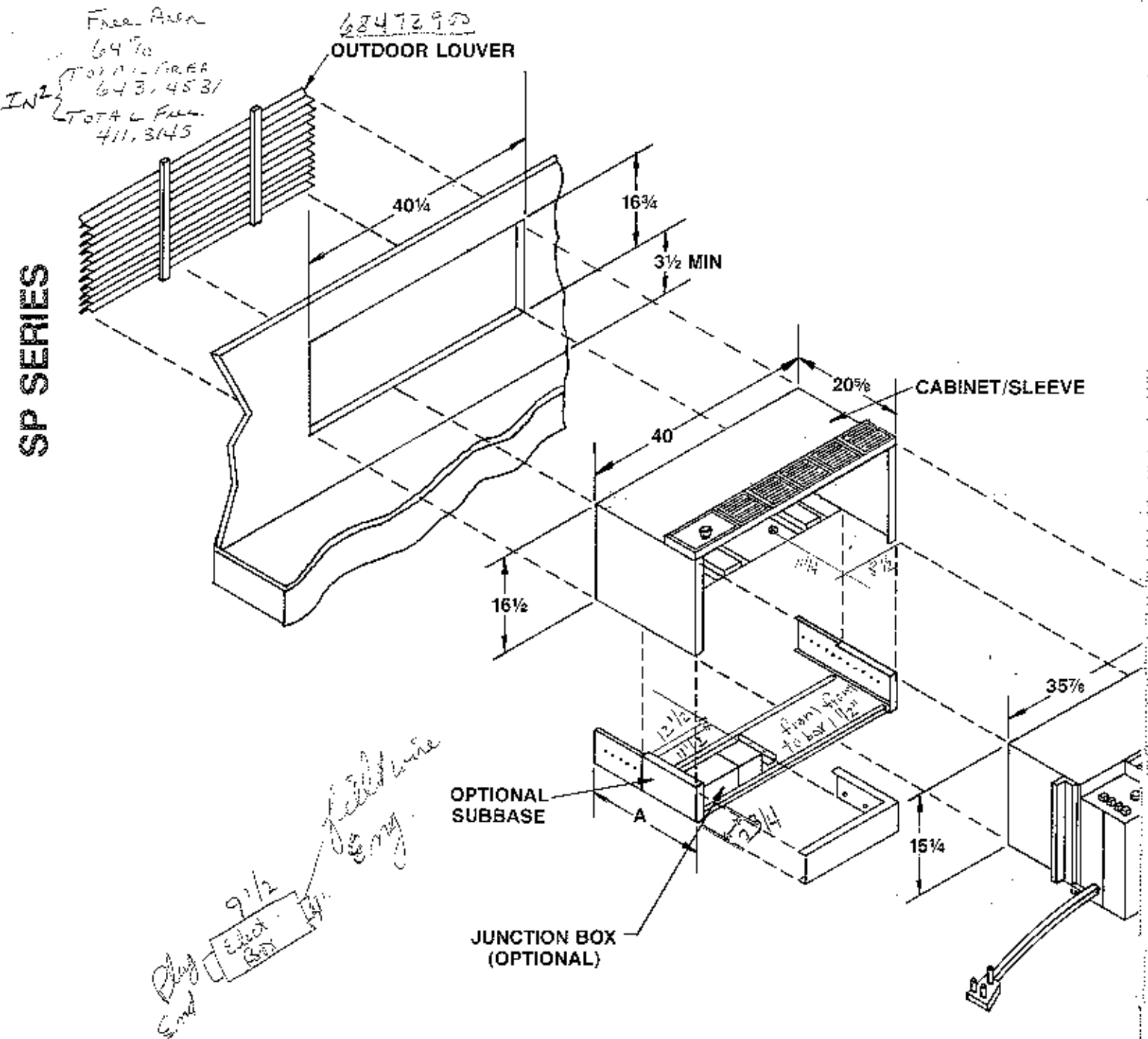
CAC SWITCH The room side supply air shall be either constant or cycling with the compressor by means of a concealed selector switch located behind the electrical access cover.

CABINETY

ADJOINING ROOM OUTLET The Room Cabinet shall include a provision for directing up to 40% of the Supply Air to an adjoining room.

Electric Heat 200/200 Low Supply Line and - 10/120V + 120V in Unit

SP SERIES



702 SP SERIES

The Friedrich Climate Master 702 SP Series Package Terminal Air Conditioners are thru-the wall cooling/heating units providing individual zone conditioning. Each unit consists of three sections: cabinet/sleeve, outdoor louver, and chassis. Each section is designed for ease of installation. Extensive laboratory tests are performed to assure heating and cooling operation over a wide range of conditions.

SP SPECIFICATIONS OUTDOOR LOUVER

Architectural outdoor louver shall be constructed from extruded aluminum with a clear anodized finish. Construction

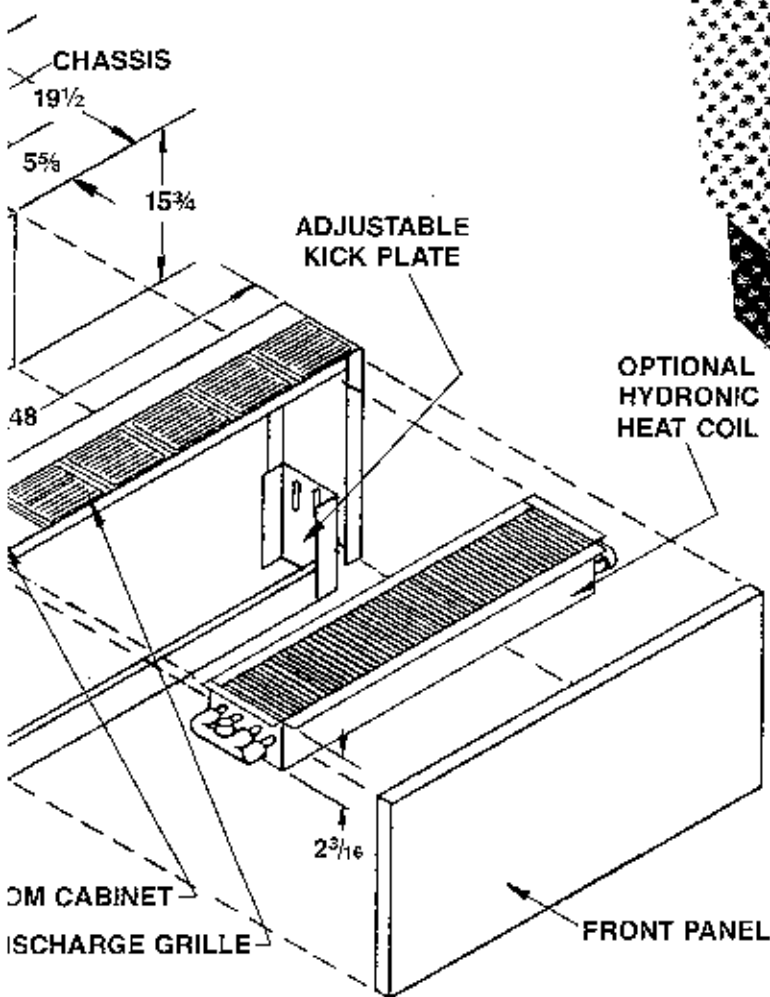
shall be of angled horizontal blades secured to vertical struts forming an attractive design which blends harmoniously with the exterior walls. The louver shall be factory installed within the Cabinet/Sleeve.

CABINET/SLEEVE

The Cabinet/Sleeve shall consist of two sections, a back frame and a removable front panel to allow full access to the chassis. Construction shall be of heavy gauge galvanized steel finished in a neutral-colored baked enamel to blend with the interior and provide corrosion protection. Glides shall be die formed in the base rails to permit easy removal of

SPECIFICATIONS

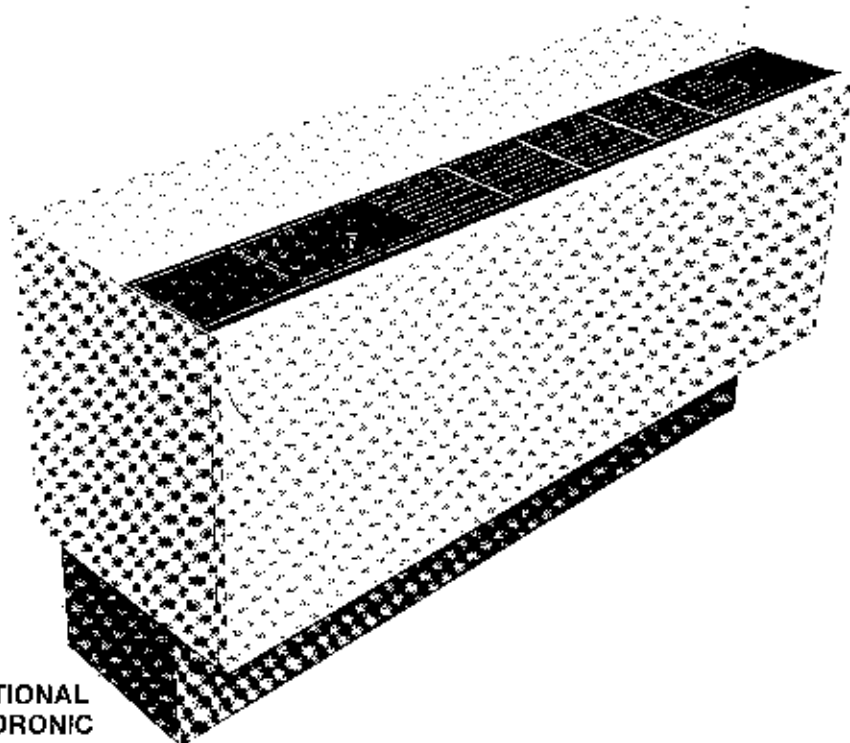
Continuing engineering research results in steady improvements. Therefore, these specifications are subject to change without notice.



ROOM CABINET

The room cabinet shall consist of two sections, a back frame and a removable front panel to allow full access to the chassis. Construction shall be of heavy gauge furniture steel finished in a neutral-colored baked enamel to blend with the interior. Provisions shall be made to match wall thicknesses of 5" to 17" depths in 1" increments. An adjustable kick plate and a washable air filter for the return air shall be provided.

The discharge grill assembly shall be of stamped steel with a 4-way adjustment capability. The grill bars shall be set at a 20 degree deflection angle.



Return air shall enter the bottom of the chassis between the kick plate and the cabinet front.

Closed-cell material shall provide a positive compression, weather-tight seal between the chassis and wall box.

OPTIONS HYDRONIC HEATING

The unit shall be provided with a hydronic heat coil for either hot water or steam heat capability. The coil shall be mounted to the cabinet back. Supply and return piping shall terminate in 3/8" OD copper pipe.

POWER CONNECTIONS

A factory-assembled electrical compartment with receptacle shall be provided to expedite installation. The receptacle shall accept the plug with cord provided on the chassis. (The unit may also have a field mounted circuit breaker or disconnect switch).



Friedrich Climate Master®

Friedrich Air Conditioning & Refrigeration Co.

Climate Master® Division

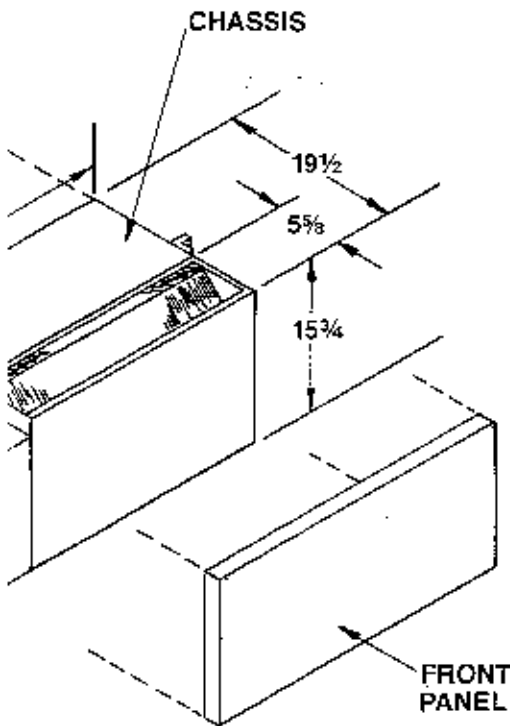
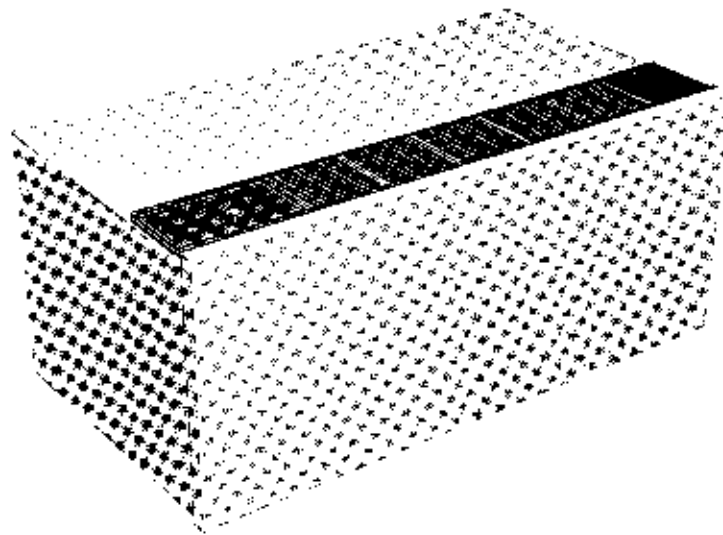
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SPECIFICATIONS



702 SP DIMENSIONS			
Item	Description	Measurements	Formula
A	*Depth of Subbase*	*8 1/2" to 20"	*1/2" Increments*

the chassis. The Base shall include a built-in pitch of not less than $\frac{1}{4}$ " for drainage to the outside. The Cabinet/Sleeve dimensions shall be $16\frac{1}{2}$ " high and $40\frac{1}{2}$ " wide. Provisions shall be made for recess capability up to 12" wall depth. A washable air filter for the return air shall be provided.

The discharge grill assembly shall be of stamped steel with a 4-way adjustment capability. The grill bars shall be set at a 20 degree deflection angle.

Return air shall enter the bottom of the chassis under the Cabinet/Sleeve front.

Closed-cell material shall provide a positive compression, weather-tight seal between the chassis and Cabinet/Sleeve.

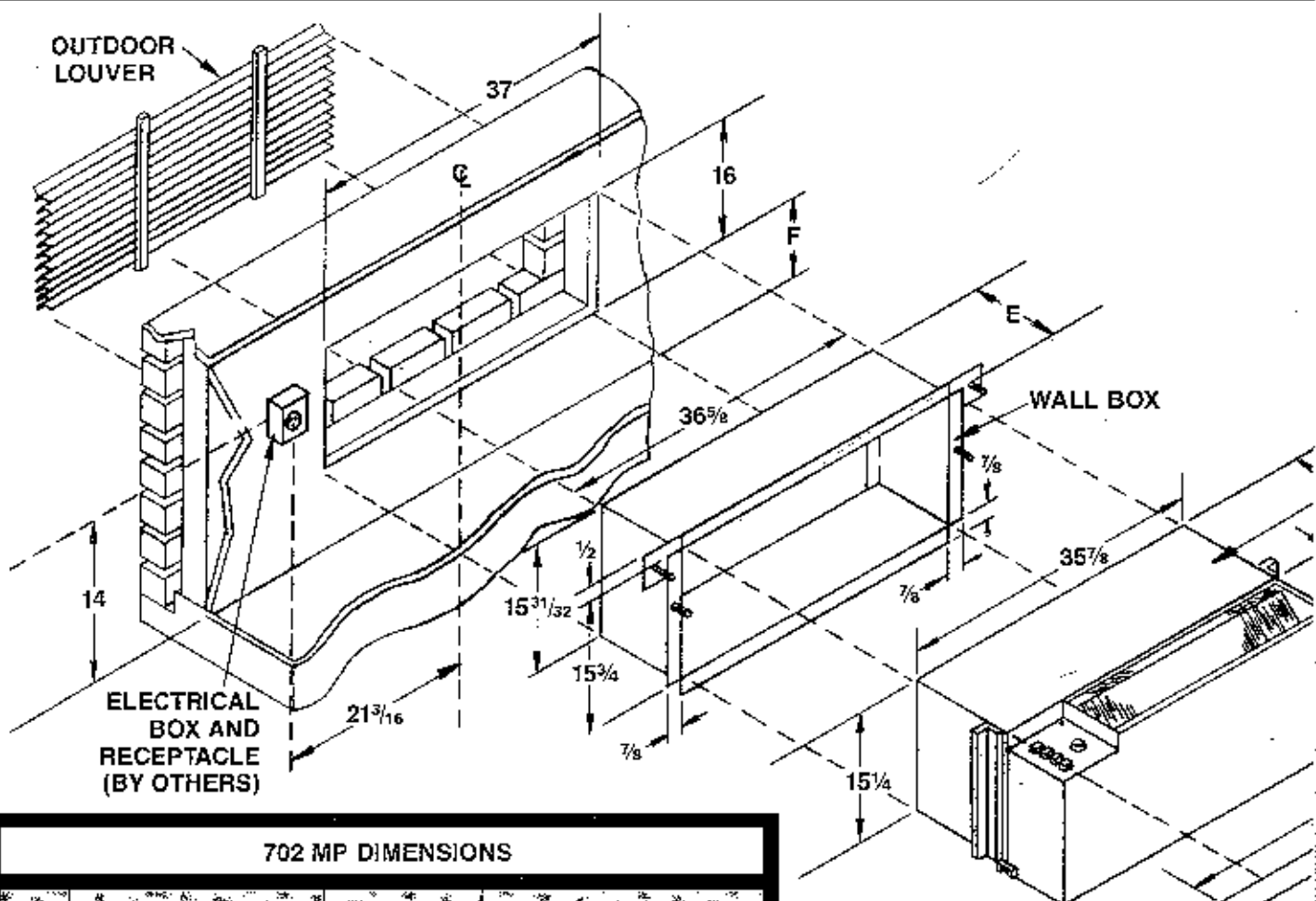
OPTIONS

CABINET/SLEEVE SUBBASE

Where specified, a subbase shall be provided. The subbase shall be capable of supporting the entire unit weight. The subbase shall be adjustable to accommodate varying wall thicknesses.

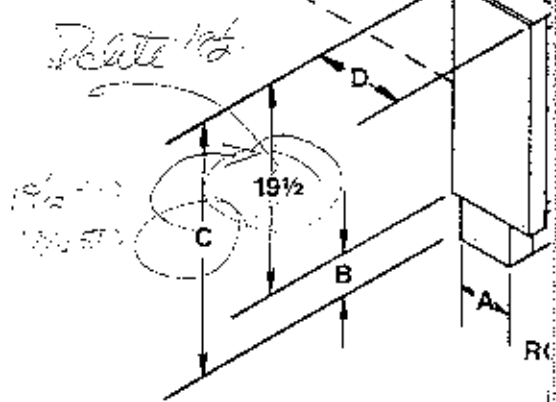
POWER CONNECTIONS

A factory-assembled electrical compartment with receptacle shall be provided to expedite installation. The receptacle shall accept the plug with cord provided on the chassis. (The unit may also have a field mounted circuit breaker or disconnect switch).



702 MP DIMENSIONS

Item	Description	Measurements	Formulas
A	Depth of Kick Plate	6" to 11"	
B	Height of Kick Plate	3" to 5 5/8"	
C	Total Height (Electric) (Hydroflic)	20 1/4" to 22 7/8" 22 1/2" to 25 1/8"	17 1/2" + B* 19 1/2" + B*
D	Depth of Cabinet	10 1/2" to 15 1/2"	For Walls 16" to 10" Minimum = 10 1/2" For Walls 9" to 5" Add 1" to Depth Each Incremental Inch
E	Depth of Wall Box	10" to 16"	
F	Base of Opening	3 1/2" to 6 1/8"	



702 MP SERIES

The Friedrich Climate Master 702 MP Series Package Terminal Air Conditioners are thru-the wall cooling/heating units providing individual zone conditioning. Each unit consists of four sections: wall box, outdoor louver, chassis, and room cabinet. Each section is designed for ease of installation. Extensive laboratory tests are performed to assure heating and cooling operation over a wide range of conditions.

weather seal shall be provided to protect interiors until the installation is complete. Glides shall be die-formed in the base to permit easy installation and removal of the chassis. The Base shall include a built-in pitch of not less than 3/4 inch for drainage to the outside. Dimensions shall be 16" high by 36 3/4" wide with provisions to match wall thickness (5" to 16") in 1" increments. The Wall box shall not form part of the room cabinet.

**MP SPECIFICATIONS
WALL BOX**

Wall box construction shall be of heavy gauge galvanized steel, electrostatically painted and baked to form a thermo-set coating for corrosion protection. A temporary

OUTDOOR LOUVER

Architectural outdoor louver shall be constructed from extruded aluminum with a clear anodized finish. Construction shall be of angled horizontal blades secured to vertical struts forming an attractive design which blends harmoniously with the exterior walls. The louver shall be secured in place within the wall box from inside of the building.