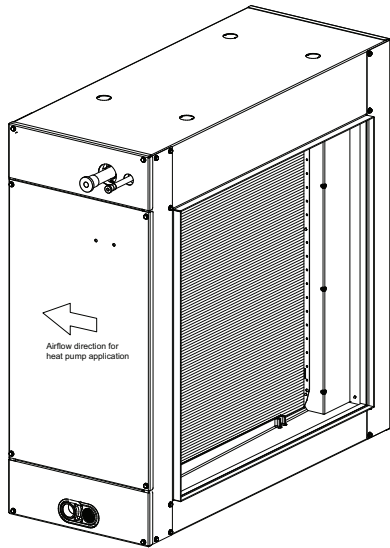


**CSPHP  
Evaporator Coil  
Slab Coil – Cased – Horizontal**

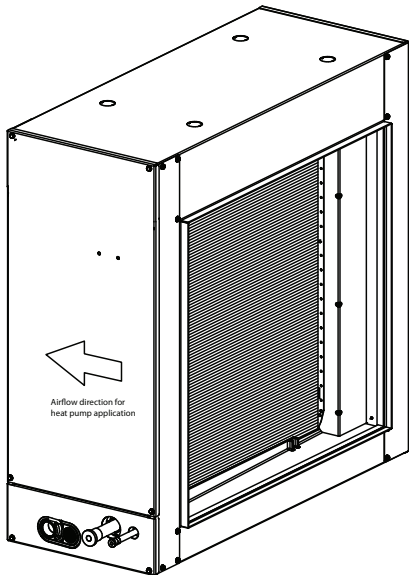


**Product Data**



**Fig. 1 – CSPHP Coil, Tin**

A11548



**Fig. 2 – CSPHP Coil, Aluminum**

A10475

The CSPHP evaporator coils incorporate proven standards for reliable system operation and performance throughout the life of a quality Air Conditioner or Heat Pump system. Evaporator coils manufactured and installed as part of a total comfort system provide AHRI-rated performance ratings and are additionally listed with UL and c-UL. The coils are available for systems utilizing Puron®, the environmentally friendly refrigerant. The CSPHP are cased slab coils that are housed in a durable, 22 gauge, pre-painted taupe metallic cabinet. The fully-insulated cabinet (foil faced with R-2.1 insulation properties) provides for quiet, efficient operation of the evaporator coil. The coils are available in sizes 024 through 060 (2-5 tons).

**DESIGN FEATURES**

**Performance** — Designed with performance in mind, these new slab coils offer low pressure drops to enhance system performance and airflow characteristics.

**Thermostatic Expansion Valves (TXV)** — All CSPHP coils have refrigerant-specific, factory-installed TXVs.

**Durable Condensate Pans** — The corrosion-resistant drain pan is designed in a new “fiberglass reinforced thermoset polyester” material (FRTP) that offers unsurpassed pan strength.

**Refrigerant Connections** — The coils are provided with industry proven sweat-connections for leak-free operation to maintain system reliability.

**Burst Pressure** — These coils meet or exceed burst pressure of 2100 psi which is at least three to five times the pressure they will see in actual application.

**UV Knockouts** — The cased coils also come with factory-installed UV knockouts for quick and easy installation of UV lights.

**Serviceability** — The coils are removable from the front of the unit without use of any tools, after the door is removed. The units are also designed with a single size screw. One tool required for all jobs.

**Installation Flexibility** — The CSPHP evaporator coils are cased slab coils that provide flexibility for a wide variety of field applications. The unique design is great for all those horizontal applications. It should be noted that this new design maintains the same duct size openings as previous units, so replacement of existing horizontal coils will be easy to convert.

**NOTE:** For cooling-only units, coil can be installed in either airflow direction. Heat pump applications require specific airflow direction to obtain performance.

**Tin Plated Copper Coils** — “T” models are built with special hairpins, tin plated to resist both general pitting corrosion and excessive indoor corrosion-Formicary Corrosion. (Formicary Corrosion is an industry phenomenon.)

**Aluminum Coils** — “L” models are built with aluminum hairpins, designed to resist both general pitting corrosion and excessive indoor corrosion-Formicary Corrosion.



A200449

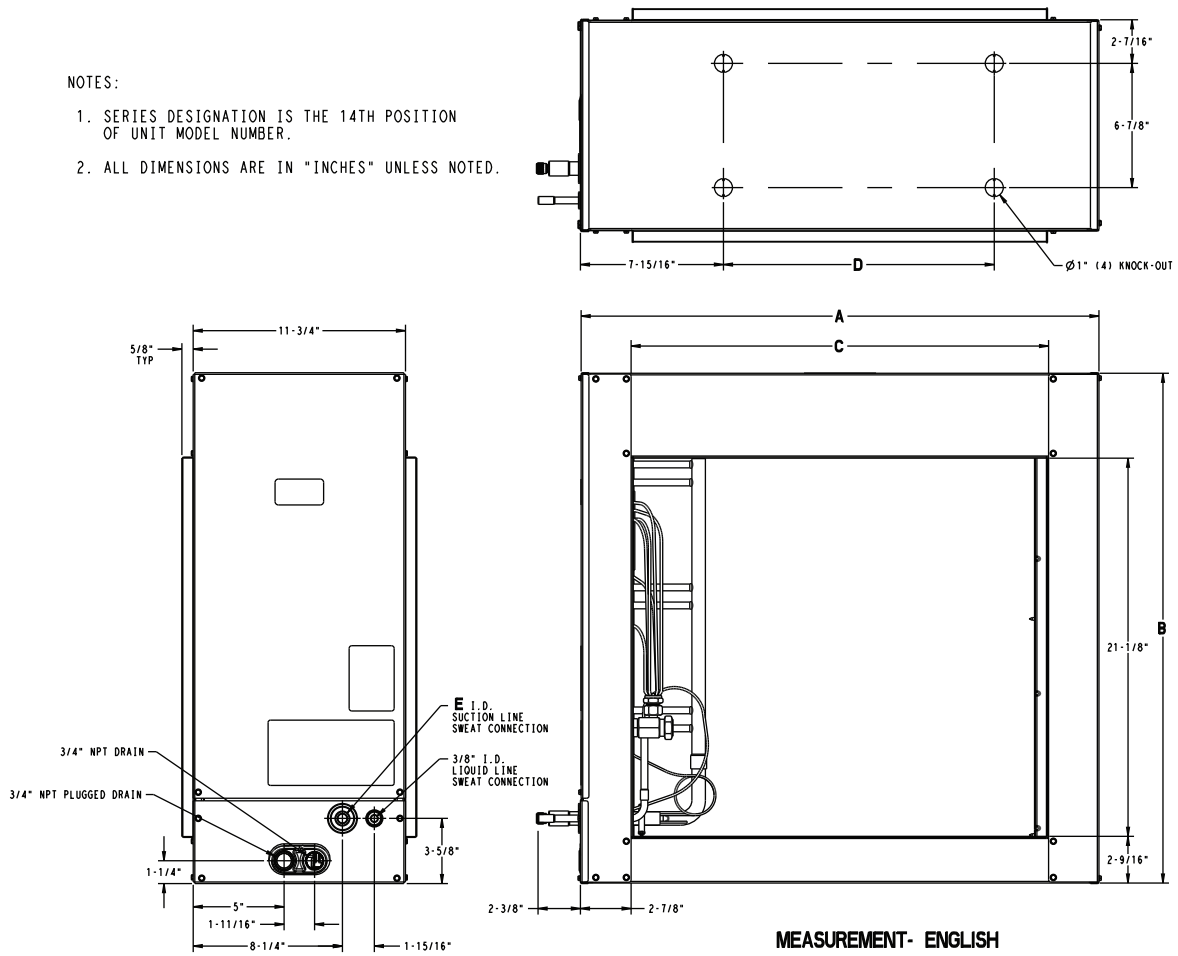
**Table 1 – Model Number Nomenclature**

	1	2	3	4	5	6	7	8	9	10	11	12	
	C	S	P	H	P	2	4	1	2	A	T	A	
<b>Product</b> C = Coil												<b>Variations</b> A = Basic	
<b>Type</b> S - Slab												<b>Tubing Design</b> L - Aluminum T - Tin Plated Copper	
<b>Refrigerant Type</b> P = Puronr Refrigerant (R-410A) TXV												<b>Revision Level</b> A = 1st	
<b>Coil Configuration</b> H - Horizontal												<b>Cabinet Width</b> 12 - 12-In. (305mm) Slab	
<b>Cabinet Finish</b> P = Painted												<b>Unit Capacity</b> 24 = 2 Ton                      42 = 3 1/2 Ton 30 = 2 1/2 Ton                48 = 4 Ton 36 = 3 Ton                      60 = 5 Ton	

## DIMENSIONS

**NOTES:**

1. SERIES DESIGNATION IS THE 14TH POSITION OF UNIT MODEL NUMBER.
2. ALL DIMENSIONS ARE IN "INCHES" UNLESS NOTED.



UNIT	SERIES	A	B	C	D	E	SHIPPING WT (lbs)
CSPHP2412ALA	A	24 1/16"	28 3/8"	16 1/16"	9 3/8"	5/8"	53.0
CSPHP3012ALA	A	24 1/16"	28 3/8"	16 1/16"	9 3/8"	3/4"	54.0
CSPHP3612ALA	A	28 13/16"	28 3/8"	23 1/16"	15 1/16"	3/4"	60.5
CSPHP4212ALA	A	28 13/16"	28 3/8"	23 1/16"	15 1/16"	3/4"	62.0
CSPHP4812ALA	A	28 13/16"	30 3/8"	23 1/16"	17 5/16"	7/8"	64.0
CSPHP6012ALA	A	38 15/16"	30 3/8"	33 13/16"	24 13/16"	7/8"	80.5

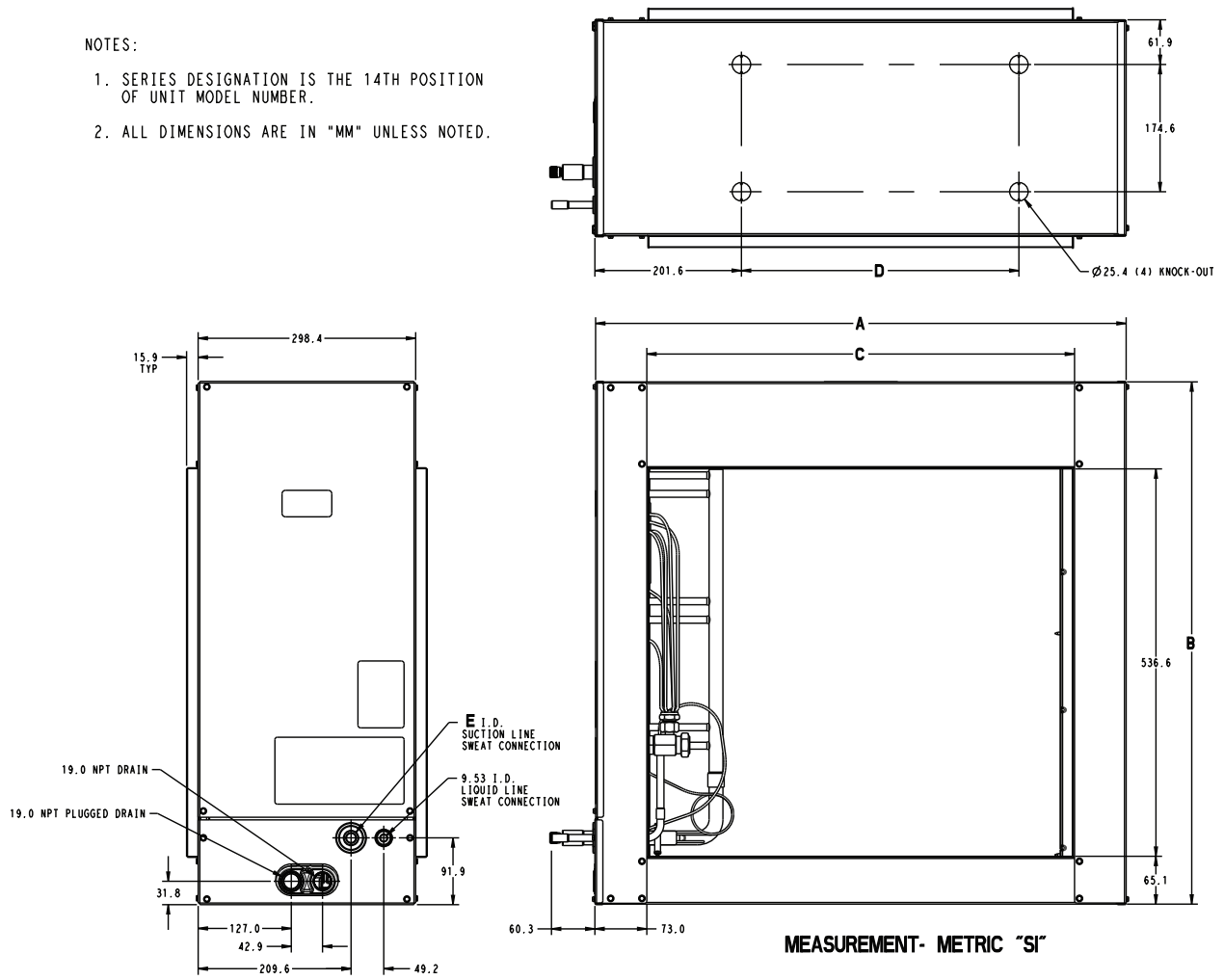
**Fig. 3 – Aluminum CSPHP coil - English Measurements**

A11549

### Dimensions (cont.)

NOTES:

1. SERIES DESIGNATION IS THE 14TH POSITION OF UNIT MODEL NUMBER.
2. ALL DIMENSIONS ARE IN "MM" UNLESS NOTED.



UNIT	SERIES	A	B	C	D	E	SHIPPING WT (Kgs)
CSPHP2412ALA	A	611.2	720.7	408.0	238.1	15.88	24.0
CSPHP3012ALA	A	611.2	720.7	408.0	238.1	19.05	24.5
CSPHP3612ALA	A	731.8	720.7	585.8	382.6	19.05	27.4
CSPHP4212ALA	A	731.8	720.7	585.8	382.6	19.05	28.1
CSPHP4812ALA	A	731.8	771.5	585.8	439.8	22.23	29.0
CSPHP6012ALA	A	989.0	771.5	858.8	630.2	22.23	36.5

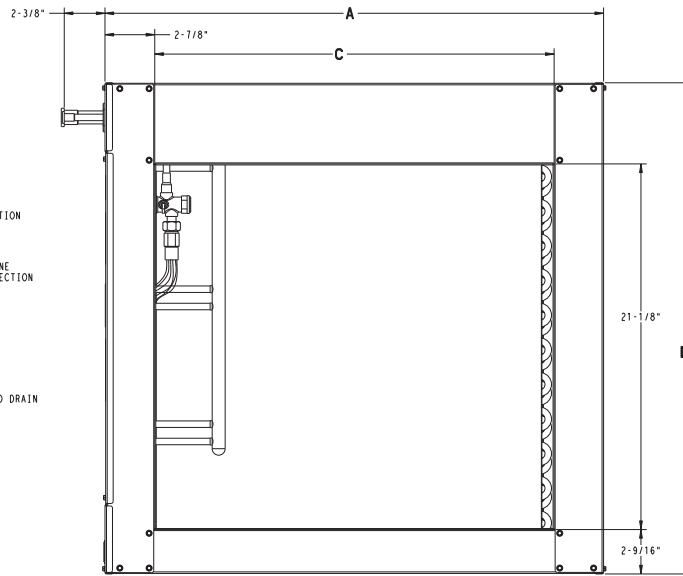
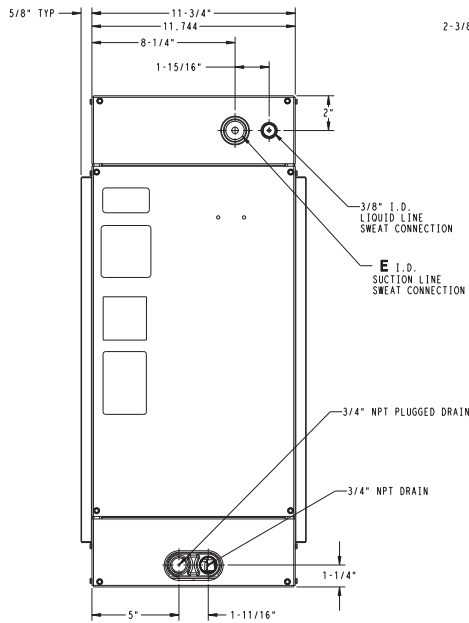
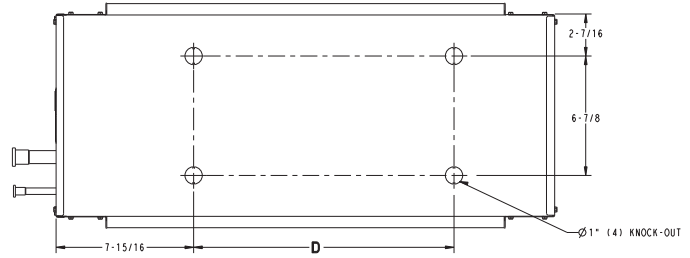
Fig. 4 – Aluminum CSPHP coil - Metric Measurements

A11550

### Dimensions (cont.)

NOTE:

1. SERIES DESIGNATION IS THE 14TH POSITION OF UNIT MODEL NUMBER.
2. IN THE THIRD POSITION (#) THE "P" DESIGNATES R410A REFRIGERANT AND "R" DESIGNATES R-22 REFRIGERANT.
3. IN THE ELEVENTH POSITION (#) THE "C" DESIGNATES NON-COATED HAIRPINS AND (T) DESIGNATES TIN-COATED HAIRPINS.
4. ALL DIMENSIONS ARE IN "INCHES" UNLESS NOTED.



MEASUREMENT- ENGLISH

UNIT	SERIES	A	B	C	D	E	SHIPPING WT (lbs) _T_ (TIN-COATED HAIRPINS)
CSPHP2412ATA	A	24 1/16"	28 3/8"	16 1/16"	9 3/8"	5/8"	55.0
CSPHP3012ATA	A	24 1/16"	28 3/8"	16 1/16"	9 3/8"	3/4"	56.0
CSPHP3612ATA	A	28 13/16"	28 3/8"	23 1/16"	15 1/16"	3/4"	61.0
CSPHP4212ATA	A	28 13/16"	28 3/8"	23 1/16"	15 1/16"	3/4"	63.0
CSPHP4812ATA	A	28 13/16"	30 3/8"	23 1/16"	17 5/16"	7/8"	65.0
CSPHP6012ATA	A	38 15/16"	30 3/8"	33 13/16"	24 13/16"	7/8"	82.5

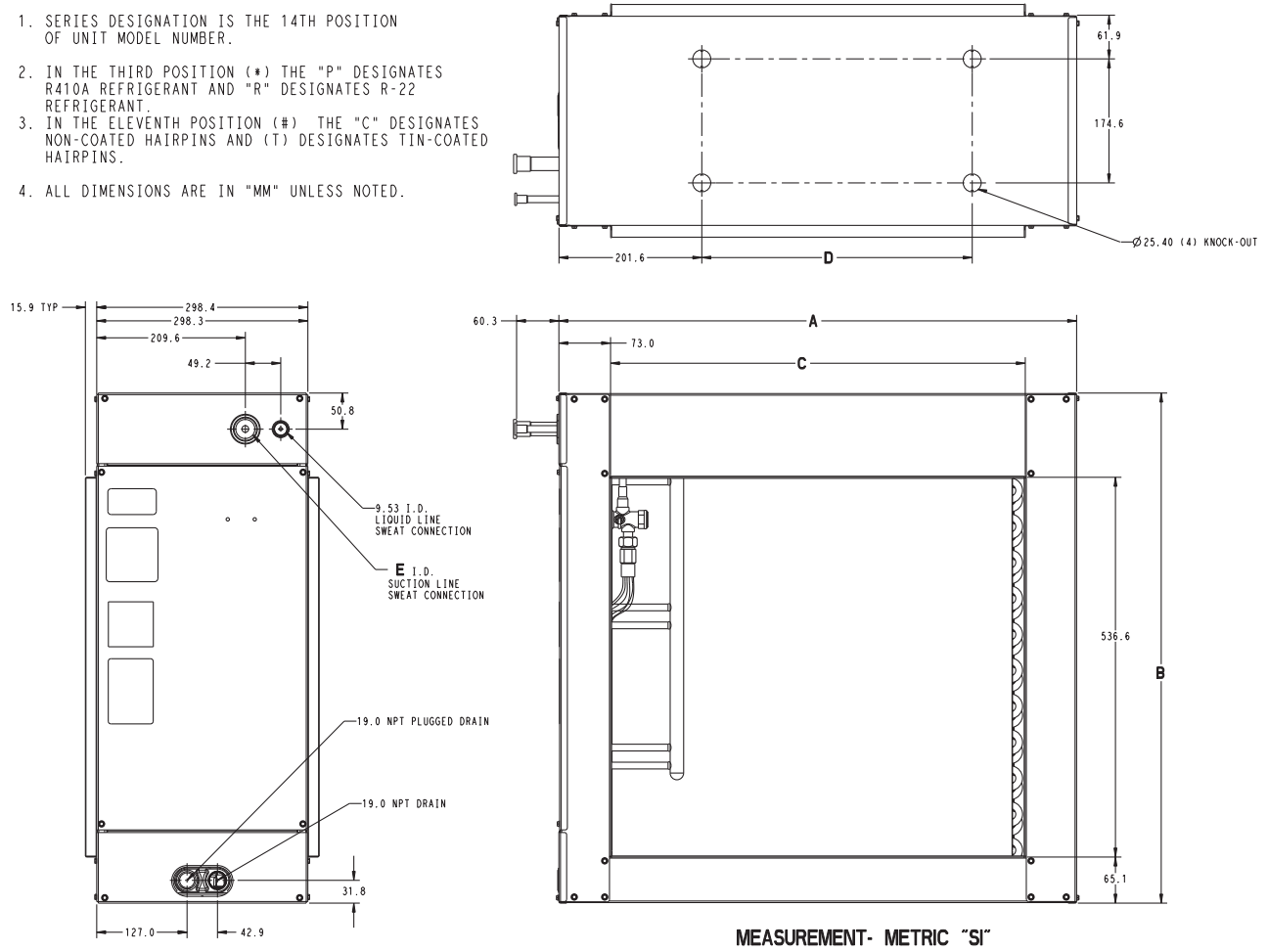
Fig. 5 – Tin Plated Copper CSPHP coil - English Measurements

A11551

### Dimensions (cont.)

NOTE:

1. SERIES DESIGNATION IS THE 14TH POSITION OF UNIT MODEL NUMBER.
2. IN THE THIRD POSITION (\*) THE "P" DESIGNATES R410A REFRIGERANT AND "R" DESIGNATES R-22 REFRIGERANT.
3. IN THE ELEVENTH POSITION (#) THE "C" DESIGNATES NON-COATED HAIRPINS AND (T) DESIGNATES TIN-COATED HAIRPINS.
4. ALL DIMENSIONS ARE IN "MM" UNLESS NOTED.



UNIT	SERIES	A	B	C	D	E	SHIPPING WT (Kgs) _T_ (TIN-COATED HAIRPINS)
CSPHP2412ATA	A	611.2	720.7	408.0	238.1	15.88	25.0
CSPHP3012ATA	A	611.2	720.7	408.0	238.1	19.05	25.4
CSPHP3612ATA	A	731.8	720.7	585.8	382.6	19.05	27.7
CSPHP4212ATA	A	731.8	720.7	585.8	382.6	19.05	28.6
CSPHP4812ATA	A	731.8	771.5	585.8	439.8	22.23	29.5
CSPHP6012ATA	A	989.0	771.5	858.8	630.2	22.23	37.4

Fig. 6 – Tin Plated Copper CSPHP coil - Metric Measurements

A11552

## PERFORMANCE DATA

**Table 2 – Cooling Capacities (MBH) - Puron® Refrigerant**

CSPHP Unit Size	INDOOR COIL AIR		SATURATED TEMPERATURE LEAVING EVAPORATOR °F (°C)														
			30 (-1)		35 (2)			40 (4)			45 (7)			50 (10)			
	CFM	EWB	TC	SHC	BF	TC	SHC	BF	TC	SHC	BF	TC	SHC	BF	TC	SHC	BF
2412	600	72 (22)	39.20	19.20	0.00	36.20	17.60	0.00	32.80	15.90	0.00	29.00	14.10	0.00	24.70	12.30	0.00
		67 (19)	33.00	19.90	0.00	29.90	18.20	0.00	26.40	16.40	0.00	22.50	14.50	0.01	18.10	12.60	0.01
		62 (17)	27.30	20.40	0.01	24.10	18.60	0.01	20.60	16.70	0.01	16.60	14.80	0.01	12.90	12.90	0.04
	800	72 (22)	47.90	23.30	0.00	44.40	21.50	0.00	40.30	19.60	0.00	35.60	17.50	0.00	30.40	15.30	0.01
		67 (19)	40.50	24.50	0.01	36.80	22.60	0.01	32.50	20.50	0.01	27.80	18.30	0.01	22.40	15.90	0.01
		62 (17)	33.70	25.60	0.02	29.80	23.50	0.02	25.50	21.30	0.02	20.70	19.00	0.02	16.60	16.60	0.07
	1000	72 (22)	54.90	26.60	0.00	50.90	24.80	0.00	46.30	22.70	0.00	41.10	20.30	0.01	35.10	17.90	0.02
		67 (19)	46.60	28.50	0.02	42.40	26.40	0.02	37.60	24.10	0.02	32.10	21.60	0.03	25.90	18.90	0.03
		62 (17)	38.90	30.10	0.03	34.50	27.80	0.03	29.60	25.30	0.03	24.30	22.80	0.04	19.90	19.90	0.11
3012	750	72 (22)	48.50	23.80	0.00	44.50	21.70	0.00	40.10	19.50	0.00	35.20	17.20	0.00	29.80	14.80	0.00
		67 (19)	40.70	24.50	0.01	36.60	22.30	0.01	32.20	20.00	0.01	27.20	17.60	0.01	21.80	15.20	0.01
		62 (17)	33.60	25.00	0.01	29.50	22.70	0.01	24.90	20.40	0.01	20.10	18.00	0.02	15.60	15.60	0.05
	1000	72 (22)	59.50	29.00	0.00	54.70	26.50	0.00	49.30	24.00	0.00	43.20	21.20	0.01	36.50	18.40	0.02
		67 (19)	50.10	30.30	0.02	45.10	27.70	0.02	39.60	24.90	0.03	33.50	22.10	0.03	26.70	19.10	0.03
		62 (17)	41.50	31.40	0.03	36.40	28.60	0.03	30.80	25.80	0.03	24.90	22.90	0.03	20.00	20.00	0.09
	1250	72 (22)	68.50	33.30	0.00	63.10	30.60	0.00	56.80	27.80	0.01	49.80	24.70	0.03	42.10	21.50	0.03
		67 (19)	57.80	35.30	0.04	52.10	32.40	0.04	45.80	29.30	0.04	38.70	26.00	0.04	30.80	22.70	0.05
		62 (17)	48.00	36.90	0.05	42.10	33.80	0.05	35.80	30.60	0.05	29.10	27.40	0.06	23.80	23.80	0.13
3612	900	72 (22)	57.20	28.00	0.00	52.70	25.60	0.00	47.70	23.10	0.00	42.00	20.50	0.00	35.70	17.80	0.00
		67 (19)	48.10	29.00	0.00	43.50	26.50	0.01	38.30	23.80	0.01	32.60	21.10	0.01	26.20	18.20	0.01
		62 (17)	39.80	29.80	0.01	35.10	27.10	0.01	29.80	24.40	0.01	24.10	21.50	0.01	18.70	18.70	0.05
	1200	72 (22)	69.90	34.00	0.00	64.50	31.30	0.00	58.40	28.40	0.00	51.50	25.30	0.00	43.80	22.10	0.01
		67 (19)	59.00	35.80	0.01	53.40	32.80	0.02	47.10	29.70	0.02	40.10	26.40	0.02	32.10	23.00	0.02
		62 (17)	49.00	37.20	0.02	43.20	34.10	0.02	36.80	30.90	0.02	29.90	27.50	0.03	24.00	24.00	0.08
	1500	72 (22)	80.10	38.90	0.00	74.10	36.00	0.00	67.10	32.80	0.00	59.20	29.40	0.02	50.40	25.70	0.02
		67 (19)	67.80	41.50	0.03	61.50	38.30	0.03	54.30	34.90	0.03	46.20	31.20	0.03	37.10	27.30	0.04
		62 (17)	56.50	43.80	0.04	49.90	40.30	0.04	42.70	36.70	0.04	34.90	32.90	0.04	28.80	28.80	0.12
4212	1050	72 (22)	70.70	34.70	0.00	65.00	31.60	0.00	58.60	28.40	0.00	51.50	25.10	0.00	43.70	21.70	0.00
		67 (19)	59.40	35.70	0.00	53.50	32.50	0.01	47.00	29.10	0.01	39.80	25.70	0.01	31.90	22.20	0.01
		62 (17)	49.00	36.50	0.01	43.00	33.20	0.01	36.50	29.70	0.01	29.40	26.30	0.01	22.80	22.80	0.05
	1400	72 (22)	87.00	42.30	0.00	80.00	38.80	0.00	72.20	35.10	0.00	63.40	31.10	0.00	53.60	27.00	0.01
		67 (19)	73.20	44.30	0.02	66.00	40.50	0.02	58.00	36.50	0.02	49.10	32.30	0.02	39.30	28.00	0.02
		62 (17)	60.60	45.80	0.02	53.20	41.80	0.03	45.10	37.70	0.03	36.50	33.50	0.03	29.20	29.20	0.08
	1750	72 (22)	100.30	48.70	0.00	92.40	44.90	0.00	83.30	40.70	0.00	73.20	36.30	0.02	61.90	31.60	0.03
		67 (19)	84.60	51.60	0.03	76.40	47.40	0.03	67.20	42.90	0.04	56.80	38.20	0.04	45.40	33.30	0.04
		62 (17)	70.20	54.00	0.04	61.70	49.50	0.04	52.50	44.90	0.04	42.70	40.10	0.05	35.00	35.00	0.12
4812	1200	72 (22)	75.30	36.80	0.00	69.30	33.70	0.00	62.60	30.40	0.00	55.10	26.90	0.00	46.70	23.30	0.00
		67 (19)	63.30	38.10	0.00	57.10	34.80	0.01	50.30	31.30	0.01	42.60	27.70	0.01	34.20	23.90	0.01
		62 (17)	52.30	39.20	0.01	46.00	35.70	0.01	39.10	32.00	0.01	31.60	28.40	0.02	24.70	24.70	0.05
	1600	72 (22)	91.80	44.60	0.00	84.60	41.00	0.00	76.40	37.20	0.00	67.30	33.10	0.01	57.00	28.80	0.02
		67 (19)	77.40	47.00	0.02	69.90	43.10	0.02	61.60	38.90	0.02	52.20	34.60	0.03	41.80	30.10	0.03
		62 (17)	64.20	48.90	0.03	56.50	44.80	0.03	48.00	40.50	0.03	39.00	36.10	0.03	31.50	31.50	0.09
	2000	72 (22)	105.00	51.00	0.00	96.90	47.20	0.00	87.60	42.90	0.01	77.20	38.40	0.03	65.50	33.60	0.03
		67 (19)	88.80	54.40	0.04	80.40	50.20	0.04	70.80	45.60	0.04	60.10	40.70	0.04	48.10	35.60	0.04
		62 (17)	73.90	57.40	0.04	65.10	52.80	0.05	55.50	48.00	0.05	45.50	43.10	0.06	37.60	37.60	0.13
6012	1600	72 (22)	98.90	48.20	0.00	91.10	44.20	0.00	82.40	40.00	0.00	72.60	35.60	0.00	61.70	30.90	0.01
		67 (19)	83.20	50.20	0.01	75.20	46.00	0.01	66.30	41.40	0.02	56.30	36.70	0.02	45.30	31.90	0.02
		62 (17)	68.90	51.80	0.02	60.70	47.30	0.02	51.60	42.60	0.02	41.80	37.90	0.02	33.00	33.00	0.07
	2000	72 (22)	114.90	55.80	0.00	106.00	51.40	0.00	95.80	46.70	0.00	84.50	41.70	0.01	71.80	36.30	0.02
		67 (19)	96.80	58.90	0.02	87.60	54.10	0.02	77.30	49.00	0.03	65.70	43.60	0.03	52.80	38.00	0.03
		62 (17)	80.30	61.40	0.03	70.80	56.30	0.03	60.30	51.00	0.03	49.10	45.50	0.04	39.70	39.70	0.10
	2400	72 (22)	128.30	62.30	0.00	118.50	57.60	0.00	107.10	52.50	0.01	94.60	47.00	0.02	80.40	41.10	0.03
		67 (19)	108.40	66.40	0.04	98.10	61.20	0.04	86.60	55.70	0.04	73.70	49.80	0.04	59.20	43.60	0.05
		62 (17)	90.10	69.90	0.05	79.50	64.40	0.05	67.90	58.60	0.05	55.60	52.60	0.06	45.90	45.90	0.13

See notes on page 8.

Legend:

**CFM** - Cubic Ft. per Minute  
**SHC** - Gross Sensible Capacity 1000 Btuh

**EWB** - Entering Wet Bulb  
**BF** - Bypass Factor

**LWB** - Leaving Wet Bulb  
**MBH** - 1000 Btuh

**TC** - Gross Cooling Capacity 1000 Btuh

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

## PERFORMANCE DATA (cont.)

**NOTES:**

1. Contact manufacturer for cooling capacities at conditions other than shown in table.
2. Formulas:  
 Leaving db = entering db -  $\frac{\text{sensible heat cap.}}{1.09 \times \text{CFM}}$   
 Leaving wb = wb corresponding to enthalpy of air leaving coil (hLWB)  

$$h_{LWB} = h_{EWB} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{CFM}}$$
 Where  $h_{EWB}$  = enthalpy of air entering coil
3. SHC is based on 80°F (27°C) db temperature of air entering the evaporator coil.  
 Below 80°F (27°C) db, subtract (Correction Factor x CFM) from SHC.  
 Above 80°F (27°C) db, add (Correction Factor x CFM) to SHC.
4. Direct interpolation is permissible. Do not extrapolate.
5. Fan motor heat has not been deducted.
6. All data points are based on 10°F (-12°C) superheat leaving coil and use of thermostatic expansion valve (TXV) device.
7. All units have sweat suction-tube connection and a liquid-tube connection. For 1-1/8-in. system suction tube, 3/4 x 1-1/8-in. suction tube connection adapter is available as accessory.
8. The CSPHP coils can be used in any properly designed system using Puron® refrigerant.
9. Before using maximum cfm shown in table, check coil static pressure drop to ensure system blower can provide necessary static pressure needed for coil and duct systems.
10. Bypass Factor = 0 indicates no psychometric solution. Use bypass factor of next lower EWB for approximation.

BYPASS FACTOR	ENTERING AIR DRY BULB TEMPERATURE °F (°C)						
	79 (26)	78 (26)	77 (25)	76 (24)	75 (24)	Under 75 (24)	
	81 (27)	82 (28)	83 (28)	84 (29)	84 (29)	Above 85 (29)	
Correction Factor							
0.10	0.98	1.96	2.94	3.92	4.91	Use formula shown below	
0.20	0.87	1.74	2.62	3.49	4.36		
0.30	0.76	1.53	2.29	3.05	3.82		

Interpolation is permissible.  
 Correction Factor =  $1.09 \times (1 - BF) \times (db - 80)$

**Table 3 – Coil Static Pressure Drop (in. w.c.) R-410A Refrigerant**

UNIT SIZE	Standard CFM																			
	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	
2412	<b>Dry</b>																			
	0.060	0.081	0.104	0.129	0.155	0.186	0.217													
	<b>Wet</b>																			
3012	0.069	0.096	0.129	0.162	0.198	0.237	0.278													
	<b>Dry</b>																			
	0.044	0.060	0.077	0.097	0.116	0.140	0.165	0.190	0.219											
3612	<b>Wet</b>																			
	0.050	0.071	0.093	0.116	0.144	0.172	0.203	0.235	0.269											
	<b>Dry</b>																			
4212	0.043	0.058	0.074	0.089	0.107	0.127	0.150	0.172	0.197	0.224	0.252									
	<b>Wet</b>																			
	0.048	0.066	0.086	0.104	0.128	0.154	0.182	0.212	0.245	0.280	0.317									
4812	<b>Dry</b>																			
			0.065	0.079	0.095	0.113	0.134	0.154	0.176	0.197	0.220	0.246	0.268							
	<b>Wet</b>																			
6012			0.076	0.094	0.114	0.137	0.163	0.189	0.215	0.245	0.273	0.303	0.332							
	<b>Dry</b>																			
			0.063	0.076	0.091	0.105	0.121	0.138	0.157	0.175	0.195	0.217	0.238	0.260	0.284					
6012	<b>Wet</b>																			
			0.080	0.101	0.123	0.149	0.175	0.206	0.215	0.231	0.261	0.291	0.325	0.361	0.394					
	<b>Dry</b>																			
6012					0.051	0.060	0.069	0.079	0.090	0.101	0.113	0.125	0.138	0.153	0.165	0.180	0.195	0.211	0.227	
	<b>Wet</b>																			
					0.063	0.076	0.089	0.102	0.118	0.135	0.155	0.175	0.193	0.214	0.235	0.258	0.279	0.302	0.325	