VTCX424U-ME5C

VARIABLE SPEED COMPRESSOR

250V / 67-150Hz / R-290

GENERAL DATA	
Compressor Model	VTCX424U-ME5C
Compressor Drawing - Universal Mounting Brackets	DCVTC052
220-240V Inverter (TAL™)[1]	030F0223
220-240V Inverter with Power Factor Corrector (PFC) (TAL™)[1]	030F0222
Inverter Drawing	DGMX0093
Wiring Diagram	DEMX0061

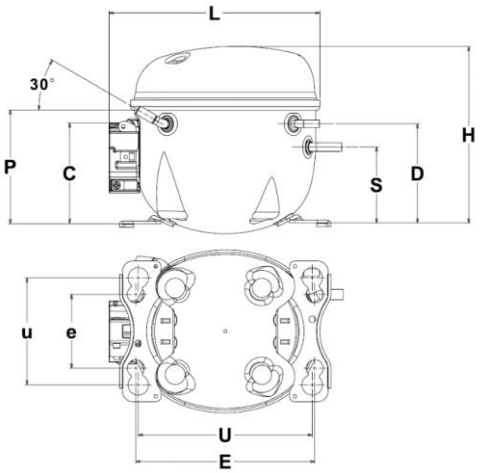
1 Usage with 030F0222 and 030F0223 approved under UL 60335-2-34 with Annex AA.

APPLICATION DATA	
Application (Commercial Reference)	L/MBP (1/4 – 3/4 hp)
Speed Range	2000 – 4500 rpm
Cooling Capacity Range[2]	1482 – 2961 BTU/h
Maximum Efficiency[2]	5.76 BTU/Wh
Refrigerant	R-290
Evaporating Temperature Range	-35°C to -5°C (-31°F to +23°F)
Speed Range	2000 – 4500 rpm
Starting Torque	High Starting Torque (HST)
Cooling System	Fan Cooling (3 m/s)
Expansion Device	Expansion Valve / Capillary Tube

2 Data for ASHRAE32 condition.

DESIGN INFORMATION	
Displacement	12.47 cm^3 (0.76 in^3)
Oil Type / Quantity	POE 32 cSt / 170 ml
Compressor Weight	7.96 kg
Motor Technology	PMSM

COMPRESSOR DIMENSIONS[3]



3 Drawing only for reference. Other options may be available. Universal mounting brackets.

Dimension	mm	in
L	200	7.88
H	167	6.59
C	95.6	3.76
P	108	4.25
D	94	3.70
S	72	2.84
E	170	6.69
e	70	2.76
U	165	6.50
u	101.6	4.00

Process tube

I.D.:6.50±0.50mm – Depth: 16.0±1.0mm – Copper

Discharge tube

I.D.:4.97±0.50mm – Depth: 16.0±1.0mm – Copper

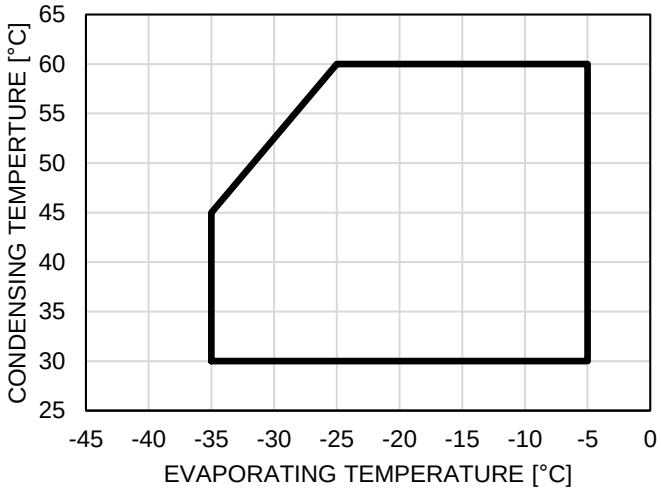
Suction tube

I.D.:6.50±0.50mm – Depth: 16.0±1.0mm – Copper

IntelliCool™

THE VARIABLE SPEED COMPRESSOR CAN NOT BE CONNECTED DIRECTLY TO THE MAINS.
THE COMPRESSOR MUST BE USED WITH THE APPROPRIATE TECUMSEH VARIABLE SPEED INVERTER.

COMPRESSOR OPERATING ENVELOPE



COMPRESSOR PERFORMANCE

ASHRAE32 (1)(2) - 220V / 60Hz (030F0223 CONTROLLER)

	COND. TEMP.		EVAP. TEMP.		COOLING CAPACITY		POWER	CURRENT	EFFICIENCY	
RPM	°C	(°F)	°C	(°F)	BTU/h	(W)	W	A	EER	(COP)
2000	54.4	(130)	-23.3	(-10)	1482	(434)	283.7	2.47	5.22	(1.53)
2500	54.4	(130)	-23.3	(-10)	1809	(530)	330.6	2.84	5.47	(1.60)
3000	54.4	(130)	-23.3	(-10)	2103	(616)	370.6	3.17	5.67	(1.66)
3600	54.4	(130)	-23.3	(-10)	2437	(714)	422.8	3.61	5.76	(1.69)
4000	54.4	(130)	-23.3	(-10)	2662	(779)	467.8	3.98	5.69	(1.67)
4500	54.4	(130)	-23.3	(-10)	2961	(867)	544.2	4.58	5.44	(1.59)
2000	54.4	(130)	-6.7	(20)	2893	(847)	399.4	3.43	7.24	(2.12)
2500	54.4	(130)	-6.7	(20)	3567	(1044)	463.6	3.95	7.69	(2.25)
3000	54.4	(130)	-6.7	(20)	4213	(1234)	535.9	4.56	7.86	(2.30)
3600	54.4	(130)	-6.7	(20)	4977	(1457)	646.9	5.49	7.69	(2.25)
4000	54.4	(130)	-6.7	(20)	5492	(1608)	743.1	6.28	7.39	(2.16)
4500	54.4	(130)	-6.7	(20)	---	---	---	---	---	---

(1) Test condition with Ambient: 32.2°C (90°F); Return Gas: 32.2°C (90°F); Liquid: 32.2°C (90°F).
(2) Tolerance for cooling capacity, input current and input power are ±5%. Tolerance for efficiency is ±7%.

EN12900 (1)(2) – 220V / 50Hz (030F0223 CONTROLLER)

	COND. TEMP.		EVAP. TEMP.		COOLING CAPACITY		POWER	CURRENT	EFFICIENCY	
RPM	°C	(°F)	°C	(°F)	BTU/h	(W)	W	A	EER	(COP)
2000	40	(104)	-35	(-31)	757	(222)	192.3	1.72	3.94	(1.15)
2500	40	(104)	-35	(-31)	995	(291)	227.5	1.98	4.38	(1.28)
3000	40	(104)	-35	(-31)	1194	(349)	258.6	2.24	4.62	(1.35)
3600	40	(104)	-35	(-31)	1400	(410)	300.5	2.59	4.66	(1.36)
4000	40	(104)	-35	(-31)	1531	(448)	337.0	2.88	4.54	(1.33)
4500	40	(104)	-35	(-31)	1699	(498)	398.5	3.34	4.26	(1.25)
2000	45	(113)	-10	(14)	2213	(648)	342.2	2.96	6.47	(1.89)
2500	45	(113)	-10	(14)	2769	(811)	406.6	3.48	6.81	(1.99)
3000	45	(113)	-10	(14)	3301	(967)	475.3	4.05	6.95	(2.03)
3600	45	(113)	-10	(14)	3929	(1150)	573.4	4.87	6.85	(2.01)
4000	45	(113)	-10	(14)	4353	(1275)	654.0	5.53	6.66	(1.95)
4500	45	(113)	-10	(14)	4902	(1435)	778.4	6.52	6.30	(1.84)

(1) Test condition with Ambient: 32°C (90°F); Return Gas: 20°C (68°F); Subcooling: 0 K.
(2) Tolerance for cooling capacity, input current and input power are ±5%. Tolerance for efficiency is ±7%.

COMPRESSOR PERFORMANCE

ASHRAE32 (1)(2) - 220V / 60Hz (030F0222 CONTROLLER)

	COND. TEMP.		EVAP. TEMP.		COOLING CAPACITY		POWER	CURRENT	EFFICIENCY	
RPM	°C	(°F)	°C	(°F)	BTU/h	(W)	W	A	EER	(COP)
2000	54.4	(130)	-23.3	(-10)	1482	(434)	286.4	1.33	5.17	(1.52)
2500	54.4	(130)	-23.3	(-10)	1809	(530)	331.7	1.53	5.45	(1.60)
3000	54.4	(130)	-23.3	(-10)	2103	(616)	376.2	1.73	5.59	(1.64)
3600	54.4	(130)	-23.3	(-10)	2437	(714)	432.2	1.98	5.64	(1.65)
4000	54.4	(130)	-23.3	(-10)	2662	(779)	472.9	2.16	5.63	(1.65)
4500	54.4	(130)	-23.3	(-10)	2961	(867)	529.8	2.42	5.59	(1.64)
2000	54.4	(130)	-6.7	(20)	2893	(847)	402.7	1.86	7.19	(2.10)
2500	54.4	(130)	-6.7	(20)	3567	(1044)	467.7	2.15	7.63	(2.23)
3000	54.4	(130)	-6.7	(20)	4213	(1234)	537.5	2.46	7.84	(2.29)
3600	54.4	(130)	-6.7	(20)	4977	(1457)	631.0	2.88	7.89	(2.31)
4000	54.4	(130)	-6.7	(20)	5492	(1608)	701.2	3.20	7.83	(2.29)
4500	54.4	(130)	-6.7	(20)	6159	(1803)	799.8	3.65	7.70	(2.25)

(1) Test condition with Ambient: 32.2°C (90°F); Return Gas: 32.2°C (90°F); Liquid: 32.2°C (90°F).
(2) Tolerance for cooling capacity, input current and input power are ±5%. Tolerance for efficiency is ±7%.

EN12900 (1)(2) – 220V / 50Hz (030F0222 CONTROLLER)

	COND. TEMP.		EVAP. TEMP.		COOLING CAPACITY		POWER	CURRENT	EFFICIENCY	
RPM	°C	(°F)	°C	(°F)	BTU/h	(W)	W	A	EER	(COP)
2000	40	(104)	-35	(-31)	757	(222)	198.5	0.94	3.81	(1.12)
2500	40	(104)	-35	(-31)	995	(291)	229.2	1.07	4.34	(1.27)
3000	40	(104)	-35	(-31)	1194	(349)	262.4	1.22	4.55	(1.33)
3600	40	(104)	-35	(-31)	1400	(410)	306.7	1.41	4.57	(1.34)
4000	40	(104)	-35	(-31)	1531	(448)	339.7	1.56	4.51	(1.32)
4500	40	(104)	-35	(-31)	1699	(498)	385.7	1.77	4.41	(1.29)
2000	45	(113)	-10	(14)	2213	(648)	347.3	1.61	6.37	(1.87)
2500	45	(113)	-10	(14)	2769	(811)	405.6	1.87	6.83	(2.00)
3000	45	(113)	-10	(14)	3301	(967)	470.3	2.16	7.02	(2.06)
3600	45	(113)	-10	(14)	3929	(1150)	557.7	2.55	7.05	(2.06)
4000	45	(113)	-10	(14)	4353	(1275)	622.6	2.84	6.99	(2.05)
4500	45	(113)	-10	(14)	4902	(1435)	712.0	3.25	6.89	(2.02)

(1) Test condition with Ambient: 32°C (90°F); Return Gas: 20°C (68°F); Subcooling: 0 K.
(2) Tolerance for cooling capacity, input current and input power are ±5%. Tolerance for efficiency is ±7%.

APPLICATION CONDITION 1 (1)(2) - 220V / 60Hz (030F0222 CONTROLLER)

	COND. TEMP.		EVAP. TEMP.		COOLING CAPACITY		POWER	CURRENT	EFFICIENCY	
RPM	°C	(°F)	°C	(°F)	BTU/h	(W)	W	A	EER	(COP)
2000	35	(95)	-25	(-13)	1573	(461)	262.7	1.23	5.99	(1.75)
3000	35	(95)	-25	(-13)	2223	(651)	344.0	1.59	6.46	(1.89)
3600	35	(95)	-25	(-13)	2553	(748)	389.6	1.80	6.55	(1.92)
4500	35	(95)	-25	(-13)	3041	(890)	464.5	2.13	6.55	(1.92)

(1) Test condition with Return Gas: 32.2°C (90°F); Liquid: 32.2°C (90°F).
(2) Tolerance for cooling capacity, input current and input power are ±5%. Tolerance for efficiency is ±7%.

APPLICATION CONDITION 2 (1)(2) – 220V / 50Hz (030F0222 CONTROLLER)

	COND. TEMP.		EVAP. TEMP.		COOLING CAPACITY		POWER	CURRENT	EFFICIENCY	
RPM	°C	(°F)	°C	(°F)	BTU/h	(W)	W	A	EER	(COP)
2000	45	(113)	-10	(14)	2260	(662)	331.0	1.54	6.83	(2.00)
3000	45	(113)	-10	(14)	3372	(987)	448.1	2.06	7.52	(2.20)
3600	45	(113)	-10	(14)	4013	(1175)	531.4	2.43	7.55	(2.21)
4500	45	(113)	-10	(14)	5007	(1466)	678.5	3.09	7.38	(2.16)

(1) Test condition with Return Gas: 32°C (90°F); Subcooling: 0 K.
(2) Tolerance for cooling capacity, input current and input power are ±5%. Tolerance for efficiency is ±7%.

ASHRAE32 PERFORMANCE CURVE COEFFICIENTS – 030F0223				
COEFFICIENT	**COOLING CAPACITY**	**POWER**	**CURRENT**	**MASS FLOW**
C_n	**BTU/h**	**W**	**A**	**lb/h**
C_1	9.763944215119E+03	8.013630588301E+03	6.679933916265E+01	7.608921659132E+01
C_2	1.522718258886E+00	-1.164977099652E-01	-1.988303814102E-03	1.028316122142E-02
C_3	-5.986039356991E-05	-1.833022961959E-04	-1.197636302900E-06	-4.210097855362E-07
C_4	2.273011185067E-08	1.270466913685E-08	7.833171111456E-11	1.514911946153E-10
C_5	1.328749809898E+02	6.253553427756E+01	5.352551782889E-01	8.990188178577E-01
C_6	2.139503894157E+00	5.059790112814E-01	4.398877637779E-03	1.626671363724E-02
C_7	3.058653928141E-02	3.885109605040E-03	3.055409650408E-05	2.452435668200E-04
C_8	-5.569562819805E+02	-5.018100776728E+02	-4.118943934063E+00	-4.404115635465E+00
C_9	1.079302645329E+01	9.926791983278E+00	8.142187183529E-02	8.630547471785E-02
C_{10}	-7.270319278063E-02	-6.208096984166E-02	-5.106735256181E-04	-5.818811415679E-04
C_{11}	9.961079728669E-04	1.073611715555E-03	9.242808085397E-06	5.944519446466E-06
C_{12}	-1.625604625281E-07	5.921850465831E-08	4.432922574572E-10	-1.064578182266E-09
C_{13}	-3.498532342716E-06	4.472087624038E-06	4.004791964647E-08	-3.359951673962E-08
C_{14}	-3.078503147957E-06	-1.215670594756E-05	-1.000287285077E-07	-1.906533577192E-08
C_{15}	1.480662457561E-02	-2.557128924832E-02	-2.260865910735E-04	1.356451690029E-04
C_{16}	2.395945835178E-02	2.786120006408E-02	2.336103482969E-04	1.610060219797E-04
C_{17}	-2.100882618106E+00	-2.403135489207E+00	-2.024370761933E-02	-1.328431652200E-02
C_{18}	9.470646621162E-06	-1.403140908038E-06	-9.883185429058E-09	6.204831321951E-08
C_{19}	8.869191431740E-04	-1.445720634239E-04	-1.318428590883E-06	6.524666774650E-06
C_{20}	-2.959794086274E-06	2.141862492224E-06	1.615194000954E-08	-1.934711188042E-08
C_{21}	-1.496102521656E-04	-3.834368040838E-04	-3.098594746065E-06	-1.060240312767E-06
C_{22}	-1.228209156960E-02	-9.027602255763E-03	-8.248832952340E-05	-7.005696772788E-05
C_{23}	2.471081907061E-03	2.624113498905E-02	2.134153203190E-04	1.536776255762E-05

PERFORMANCE CURVE EQUATION

$$Y = C_1 + C_2 X_1 + C_3 X_1^2 + C_4 X_1^3 + C_5 X_2 + C_6 X_2^2 + C_7 X_2^3 + C_8 X_3 + C_9 X_3^2 + C_{10} X_3^3 + C_{11} X_1 X_2 X_3 + C_{12} X_1^2 X_2 X_3 + C_{13} X_1 X_2^2 X_3 + C_{14} X_1 X_2 X_3^2 + C_{15} X_1 X_2 + C_{16} X_1 X_3 + C_{17} X_2 X_3 + C_{18} X_1^2 X_2 + C_{19} X_1 X_2^2 + C_{20} X_1^2 X_3 + C_{21} X_1 X_3^2 + C_{22} X_2^2 X_3 + C_{23} X_2 X_3^2$$

INPUTS

X_1 = Motor speed (rpm)

X_2 = Evaporating temperature (°C)

X_3 = Condensing temperature (°C)

EN12900 PERFORMANCE CURVE COEFFICIENTS – 030F0223				
COEFFICIENT	COOLING CAPACITY	POWER	CURRENT	MASS FLOW
C_n	BTU/h	W	A	lb/h
C_1	-3.216032036662E+03	-8.803709992915E+02	-8.320286665810E+00	-1.229130315781E+01
C_2	3.132538490929E+00	-1.111377389761E+00	-9.226289034274E-03	1.674493422217E-02
C_3	-1.206446182513E-04	-3.225346174119E-05	-6.225109584698E-08	-7.819200991787E-07
C_4	1.998137820766E-08	9.512600055346E-09	5.458173927453E-11	1.558708478895E-10
C_5	-4.712173348665E+01	5.646514195856E+01	4.311942716740E-01	-3.628067036334E-02
C_6	-5.394002925968E-01	-1.205135407093E+00	-8.928971086380E-03	2.322813213191E-03
C_7	-3.182612115999E-03	-1.425371860169E-02	-1.170852422011E-04	3.886721177573E-05
C_8	1.400623181481E+02	9.798839135421E+01	8.851191011454E-01	4.760266078229E-01
C_9	-2.191326872256E+00	-3.054014744033E+00	-2.596888965374E-02	-6.709076773632E-03
C_{10}	7.595688637053E-03	2.805439237281E-02	2.310829065982E-04	-4.139827999072E-06
C_{11}	-5.788818581891E-04	1.689730383710E-03	1.330323402393E-05	2.501488226780E-06
C_{12}	-4.444874462927E-08	1.321148754375E-08	9.753223412819E-11	-3.945445746299E-10
C_{13}	-1.027233891127E-05	-2.325340680167E-06	-1.340799422747E-08	-1.573618498783E-08
C_{14}	5.361136510285E-07	-1.912927889880E-05	-1.485956495585E-07	-1.087324468310E-08
C_{15}	8.244976586957E-02	-3.552674565049E-02	-2.841062267667E-04	3.874881309898E-04
C_{16}	-2.705634865015E-02	5.546630196625E-02	4.334838974671E-04	-5.204164402528E-06
C_{17}	1.839896903490E+00	-3.407529254066E+00	-2.580033128424E-02	6.213843254955E-03
C_{18}	3.226448917663E-06	2.674711703491E-07	2.382623958141E-09	2.712138954115E-08
C_{19}	1.257635766857E-03	1.766316744111E-04	1.126646147533E-06	7.368969709067E-06
C_{20}	-1.451444412195E-06	-4.865637859469E-07	-3.743212454674E-09	-1.506135147232E-08
C_{21}	1.383186769459E-04	-5.470925901756E-04	-4.271058744974E-06	5.327993050086E-07
C_{22}	-6.158389826879E-03	3.950111149436E-03	1.514440291200E-05	-1.089495418585E-04
C_{23}	-2.668427988829E-02	3.934284853449E-02	2.938040189040E-04	-1.597765582417E-04

PERFORMANCE CURVE EQUATION

$$Y = C_1 + C_2 X_1 + C_3 X_1^2 + C_4 X_1^3 + C_5 X_2 + C_6 X_2^2 + C_7 X_2^3 + C_8 X_3 + C_9 X_3^2 + C_{10} X_3^3 + C_{11} X_1 X_2 X_3 + C_{12} X_1^2 X_2 X_3 + C_{13} X_1 X_2^2 X_3 + C_{14} X_1 X_2 X_3^2 + C_{15} X_1 X_2 + C_{16} X_1 X_3 + C_{17} X_2 X_3 + C_{18} X_1^2 X_2 + C_{19} X_1 X_2^2 + C_{20} X_1^2 X_3 + C_{21} X_1 X_3^2 + C_{22} X_2^2 X_3 + C_{23} X_2 X_3^2$$

INPUTS

X_1 = Motor speed (rpm)

X_2 = Evaporating temperature (°C)

X_3 = Condensing temperature (°C)

ASHRAE32 PERFORMANCE CURVE COEFFICIENTS – 030F0222				
COEFFICIENT	**COOLING CAPACITY**	**POWER**	**CURRENT**	**MASS FLOW**
C_n	**BTU/h**	**W**	**A**	**lb/h**
C_1	9.763944215119E+03	5.177787741810E+03	2.314815838786E+01	7.608921659132E+01
C_2	1.522718258886E+00	-2.503195119680E-01	-1.060665237020E-03	1.028316122142E-02
C_3	-5.986039356991E-05	-5.027450880879E-06	-2.626694448227E-08	-4.210097855362E-07
C_4	2.273011185067E-08	3.215421278608E-09	1.403514902389E-11	1.514911946153E-10
C_5	1.328749809898E+02	1.884862035466E+01	7.392511009493E-02	8.990188178577E-01
C_6	2.139503894157E+00	1.484847899214E-01	5.626671393593E-04	1.626671363724E-02
C_7	3.058653928141E-02	3.717705936407E-03	1.627847974737E-05	2.452435668200E-04
C_8	-5.569562819805E+02	-3.171495619635E+02	-1.420937735262E+00	-4.404115635465E+00
C_9	1.079302645329E+01	6.498793840685E+00	2.924729523662E-02	8.630547471785E-02
C_{10}	-7.270319278063E-02	-4.330624189208E-02	-1.953232571116E-04	-5.818811415679E-04
C_{11}	9.961079728669E-04	4.935970025102E-04	2.160088070413E-06	5.944519446466E-06
C_{12}	-1.625604625281E-07	-1.262043838919E-08	-5.375378131006E-11	-1.064578182266E-09
C_{13}	-3.498532342716E-06	5.431533382297E-07	2.360537740455E-09	-3.359951673962E-08
C_{14}	-3.078503147957E-06	-3.729352592352E-06	-1.637272709944E-08	-1.906533577192E-08
C_{15}	1.480662457561E-02	-1.533856357878E-02	-6.733635467526E-05	1.356451690029E-04
C_{16}	2.395945835178E-02	1.433592557919E-02	6.165360904342E-05	1.610060219797E-04
C_{17}	-2.100882618106E+00	-4.650140222220E-01	-1.732363106726E-03	-1.328431652200E-02
C_{18}	9.470646621162E-06	1.346615612341E-06	6.007483975506E-09	6.204831321951E-08
C_{19}	8.869191431740E-04	5.814512216484E-06	3.443127965554E-08	6.524666774650E-06
C_{20}	-2.959794086274E-06	-9.386873315420E-08	-1.475471420451E-10	-1.934711188042E-08
C_{21}	-1.496102521656E-04	-1.288750516943E-04	-5.683608334320E-07	-1.060240312767E-06
C_{22}	-1.228209156960E-02	4.972540927639E-05	2.037083196349E-06	-7.005696772788E-05
C_{23}	2.471081907061E-03	4.645526168360E-03	1.834600321171E-05	1.536776255762E-05

PERFORMANCE CURVE EQUATION

$$Y = C_1 + C_2 X_1 + C_3 X_1^2 + C_4 X_1^3 + C_5 X_2 + C_6 X_2^2 + C_7 X_2^3 + C_8 X_3 + C_9 X_3^2 + C_{10} X_3^3 + C_{11} X_1 X_2 X_3 + C_{12} X_1^2 X_2 X_3 + C_{13} X_1 X_2^2 X_3 + C_{14} X_1 X_2 X_3^2 + C_{15} X_1 X_2 + C_{16} X_1 X_3 + C_{17} X_2 X_3 + C_{18} X_1^2 X_2 + C_{19} X_1 X_2^2 + C_{20} X_1^2 X_3 + C_{21} X_1 X_3^2 + C_{22} X_2^2 X_3 + C_{23} X_2 X_3^2$$

INPUTS

X_1 = Motor speed (rpm)

X_2 = Evaporating temperature (°C)

X_3 = Condensing temperature (°C)

EN12900 PERFORMANCE CURVE COEFFICIENTS – 030F0222				
COEFFICIENT	**COOLING CAPACITY**	**POWER**	**CURRENT**	**MASS FLOW**
C_n	**BTU/h**	**W**	**A**	**lb/h**
C_1	-3.216032036662E+03	-1.201433684997E+03	-6.193570415024E+00	-1.229130315781E+01
C_2	3.132538490929E+00	-2.566743710122E-01	-1.013793344811E-03	1.674493422217E-02
C_3	-1.206446182513E-04	3.719207984975E-06	2.473149681162E-08	-7.819200991787E-07
C_4	1.998137820766E-08	1.232710971240E-09	4.417677423510E-12	1.558708478895E-10
C_5	-4.712173348665E+01	-1.036664637225E+01	-7.024149673634E-02	-3.628067036334E-02
C_6	-5.394002925968E-01	-5.640975591550E-01	-2.435617810455E-03	2.322813213191E-03
C_7	-3.182612115999E-03	-8.401677832801E-03	-3.811867019839E-05	3.886721177573E-05
C_8	1.400623181481E+02	7.470654952852E+01	3.791178308184E-01	4.760266078229E-01
C_9	-2.191326872256E+00	-1.475942634275E+00	-7.238183168440E-03	-6.709076773632E-03
C_{10}	7.595688637053E-03	1.029866321912E-02	4.837881442274E-05	-4.139827999072E-06
C_{11}	-5.788818581891E-04	4.669491175733E-04	1.802376940446E-06	2.501488226780E-06
C_{12}	-4.444874462927E-08	1.544537971148E-08	7.965469730012E-11	-3.945445746299E-10
C_{13}	-1.027233891127E-05	-6.979419660547E-07	-2.021292054814E-09	-1.573618498783E-08
C_{14}	5.361136510285E-07	-5.898661586123E-06	-2.364516288843E-08	-1.087324468310E-08
C_{15}	8.244976586957E-02	-6.233411980247E-03	-2.069885273759E-05	3.874881309898E-04
C_{16}	-2.705634865015E-02	1.522761329898E-02	6.049249311335E-05	-5.204164402528E-06
C_{17}	1.839896903490E+00	-1.753135712934E-01	2.203033594697E-04	6.213843254955E-03
C_{18}	3.226448917663E-06	-2.874788699008E-07	-1.735385938655E-09	2.712138954115E-08
C_{19}	1.257635766857E-03	8.583644455529E-05	3.323015374257E-07	7.368969709067E-06
C_{20}	-1.451444412195E-06	8.704015451122E-08	5.239157041130E-10	-1.506135147232E-08
C_{21}	1.383186769459E-04	-1.599649359472E-04	-6.396154353036E-07	5.327993050086E-07
C_{22}	-6.158389826879E-03	-1.246284661605E-03	-8.012502905747E-06	-1.089495418585E-04
C_{23}	-2.668427988829E-02	3.912744894023E-03	7.081645053475E-06	-1.597765582417E-04

PERFORMANCE CURVE EQUATION

$$Y = C_1 + C_2 X_1 + C_3 X_1^2 + C_4 X_1^3 + C_5 X_2 + C_6 X_2^2 + C_7 X_2^3 + C_8 X_3 + C_9 X_3^2 + C_{10} X_3^3 + C_{11} X_1 X_2 X_3 + C_{12} X_1^2 X_2 X_3 + C_{13} X_1 X_2^2 X_3 + C_{14} X_1 X_2 X_3^2 + C_{15} X_1 X_2 + C_{16} X_1 X_3 + C_{17} X_2 X_3 + C_{18} X_1^2 X_2 + C_{19} X_1 X_2^2 + C_{20} X_1^2 X_3 + C_{21} X_1 X_3^2 + C_{22} X_2^2 X_3 + C_{23} X_2 X_3^2$$

INPUTS

X_1 = Motor speed (rpm)

X_2 = Evaporating temperature (°C)

X_3 = Condensing temperature (°C)

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