

SPECIFICATIONS OF COMPRESSOR

Model No: 7CB083LA01/04

Output : 4.5 HP

Temporary

Sonyo Compressor (Dalian) Co., Ltd.

10-Jul-24

GENERAL SPECIFICATIONS

Model No:		7CB083LA01/04
Application		
Evaporating Temp Range	(°C)	-30 ~40
Refrigerant		R290
Compressor Cooling		Natural Cooling
Rated Performance		
Capacity	(W)	12450
Input	(W)	3800
Current	(A)	7.4
Revolution	(min ⁻¹)	2900
Sound Level	(dB(A))	60 MAX.
Rating Conditions		
Power Source		3-PH 380V 50Hz
Evaporating Temp	(°C)	7
Condensing Temp	(°C)	54.5
Suction Gas Temp	(°C)	18.5
Liquid Temp	(°C)	46
Ambient Temp	(°C)	35.0
Measuring Point of Sound Level		
Distance from the Compressor	(m)	1.0
Compressor		
Design		Hermetic Scroll
Displacement	(cm3)	83.7
Suction Line Connection	(Φ mm OD)	22.22
Discharge Line Connection	(Φ mm OD)	12.7
Oil	(ml)	1700 (PZ68S)
Mass(Incl.Oil)	(kg)	
Motor		
Type		3-PH Induction Motor(3IR)
Pole		2
Rated Power Source		3-PH 50Hz 380-415V/60Hz 440-460
Voltage Range	(V)	342-457/396-506
Starting Current	(A)	
MCC	(A)	16,5 /16,7
RLA	(A)	11,8/11,9
LRA	(A)	70/72

Sonyo Compressor (Dalian) Co., Ltd.

PERFORMANCE DATA

Compressor Model	7CB083LA01/04
Power Source	3PH 50Hz 380V
Suction Gas Superheat(K)	11.5
Sub Cooling(K)	8.5
Compressor Cooling	Natural Cooling
Refrigerant	R290

CAPACITY(W)

Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7	10	12
35.0	5,980	7,430	8,570	11,460	13,870	15,660	17,680	19,280
40.5	5,640	7,000	8,060	10,760	13,010	14,680	16,560	18,050
45.0	5,370	6,660	7,670	10,220	12,340	13,920	15,690	17,100
50.0	5,090	6,300	7,250	9,650	11,640	13,120	14,780	16,100
54.5		6,000	6,910	9,170	11,060	12,450	14,020	15,260
60.0			6,490	8,600	10,350	11,650	13,110	14,260
65.0				8,130	9,770	10,980	12,350	13,430

POWER(W)

Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7	10	12
35.0	2,460	2,510	2,540	2,580	2,600	2,600	2,600	2,600
40.5	2,720	2,780	2,820	2,860	2,880	2,890	2,890	2,890
45.0	2,970	3,040	3,070	3,120	3,140	3,150	3,160	3,160
50.0	3,280	3,350	3,380	3,440	3,470	3,480	3,490	3,490
54.5		3,650	3,690	3,750	3,780	3,800	3,810	3,820
60.0			4,110	4,180	4,220	4,240	4,260	4,270
65.0				4,600	4,650	4,680	4,700	4,710

CURRENT(A)

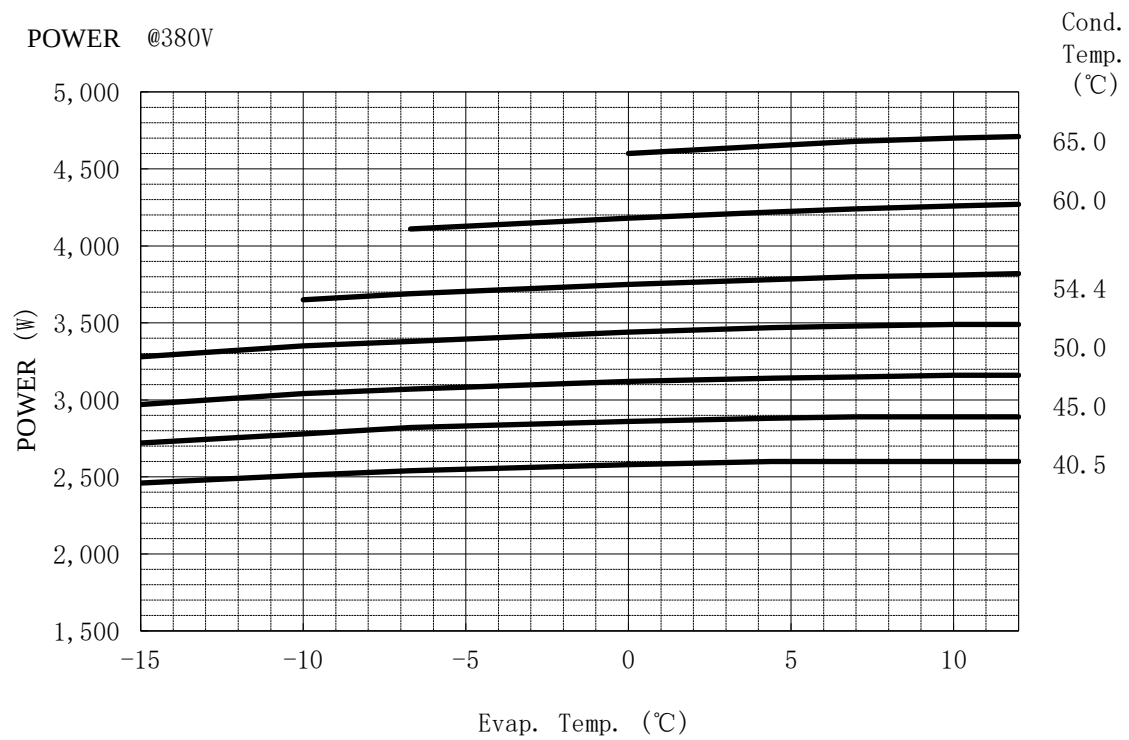
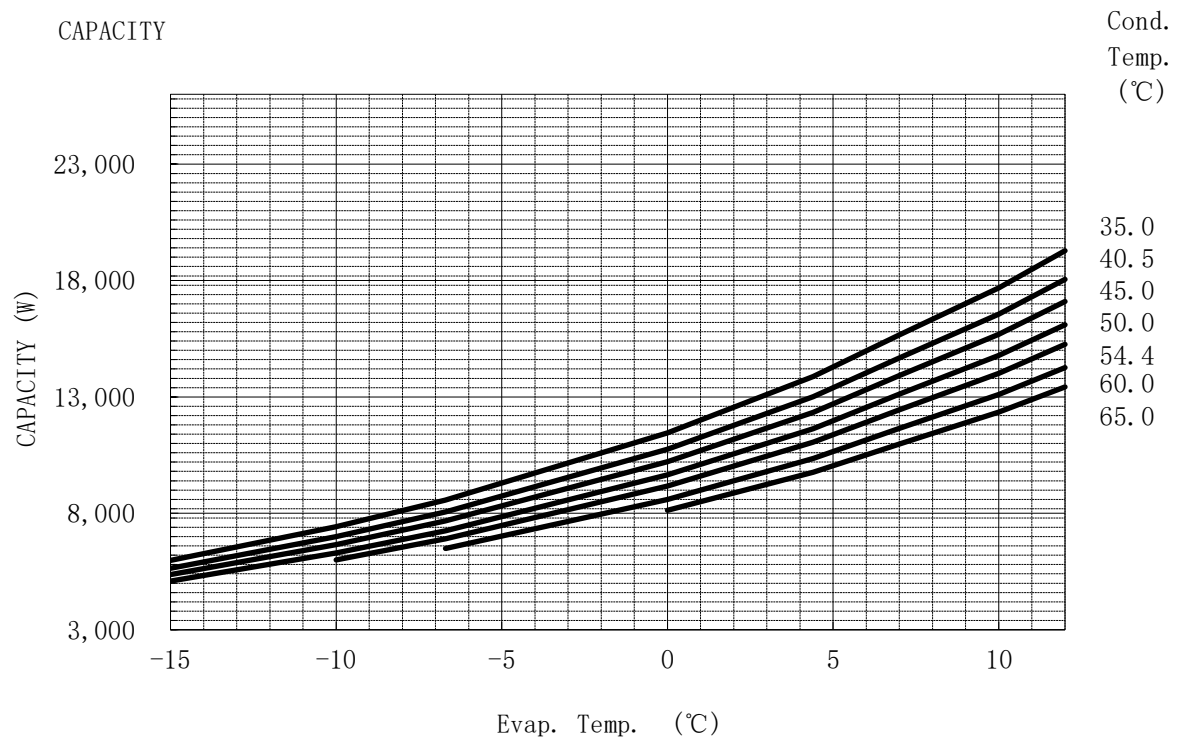
Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7	10	12
35.0	5.7	5.8	5.8	5.9	5.9	5.9	5.9	5.9
40.5	6.1	6.2	6.2	6.2	6.3	6.3	6.3	6.3
45.0	6.4	6.5	6.5	6.6	6.6	6.6	6.6	6.6
50.0	6.8	6.9	6.9	7.0	7.0	7.0	7.0	7.0
54.5		7.2	7.3	7.3	7.4	7.4	7.4	7.4
60.0			7.7	7.8	7.9	7.9	7.9	7.9
65.0				8.3	8.4	8.4	8.4	8.4

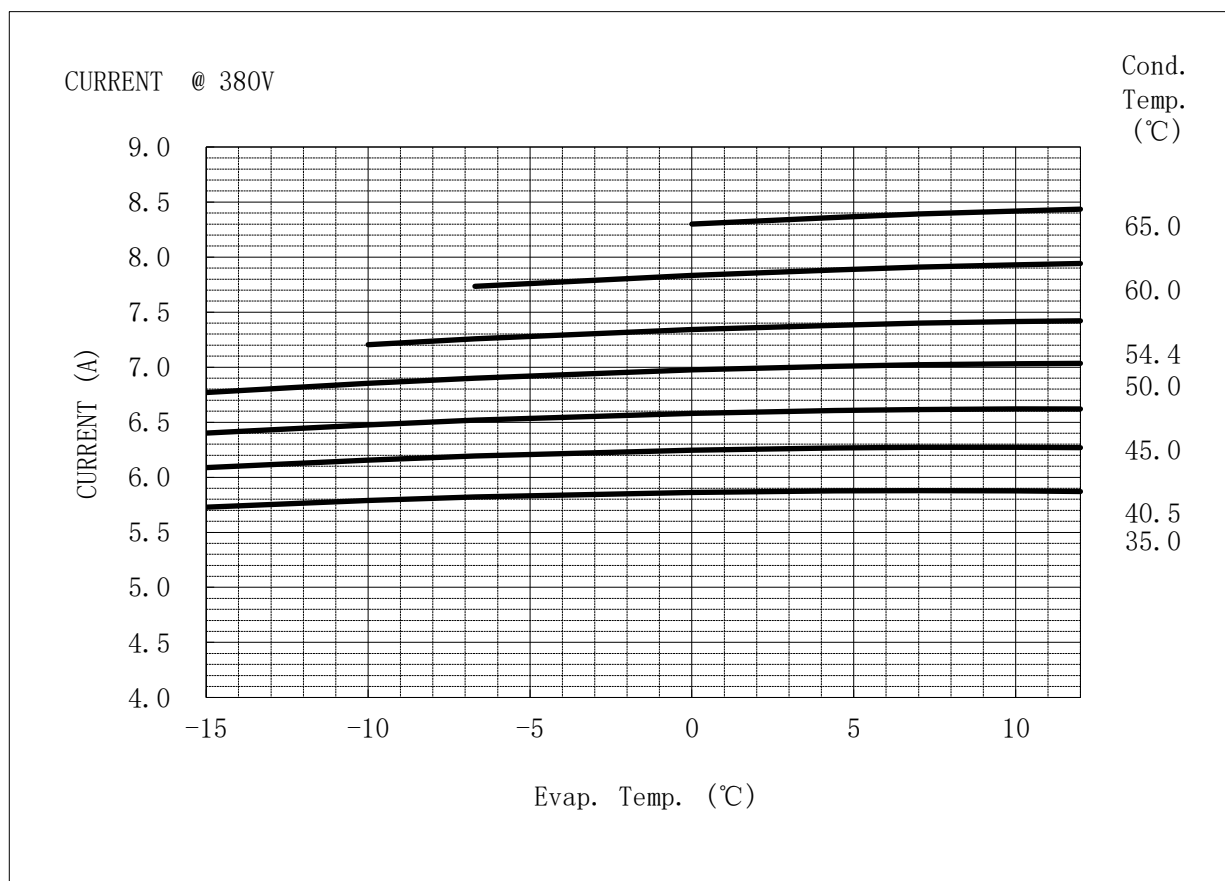
REFRIG FLOW(kg/h)

Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7	10	12
35.0	73	89	101	132	157	175	195	211
40.5	73	89	101	131	155	173	192	208
45.0	73	89	100	130	153	171	190	205
50.0	73	88	100	129	152	169	188	202
54.5		88	100	128	151	167	186	200
60.0			99	127	149	165	183	197
65.0				126	147	163	181	194

Compressor Model(Code)
Power Source

7CB083LA01/04
3PH 50Hz 380V





COEFFICIENTS OF PERFORMANCE CURVES

Compressor Model **7CB083LA01/04**
 Power Source **3PH 50Hz 380V**
 Suction Gas Superheat (K) **11.5**
 Sub Cooling (K) **8.5**
 Compressor Cooling **Natural Cooling**
 Refrigerant **R290**

$X = C1 + C2*(S) + C3*D + C4*(S^2) + C5*(S*D) + C6*(D^2) + C7*(S^3) + C8*(D*S^2) + C9*(S*D^2) + C10*(D^3)$

X—CAPACITY(W) OR POWER(W) OR CURRENT(A) OR FLOW(kg/h)

S—EVAPORATING TEMP, °C

D—CONDENSING TEMP, °C

380V-50Hz	CAPACITY (W)	POWER (W)	CURRENT (A)	FLOW (kg/h)
1	1.679461E+04	1.789430E+03	4.132512E+00	1.391796E+02
2	7.716813E+02	5.118130E+00	1.774918E-03	5.982617E+00
3	-1.752355E+02	-1.360179E+00	3.244100E-02	-2.184023E-01
4	1.561346E+01	-3.337076E-01	-2.977609E-04	1.247469E-01
5	-9.051950E+00	-1.538520E-01	-7.999946E-05	-2.428697E-02
6	6.456745E-01	6.869191E-01	4.869767E-04	1.368334E-04
7	1.316440E-01	1.109511E-03	-2.195915E-07	1.150461E-03
8	-1.318476E-01	2.146236E-03	-4.058178E-07	-6.257335E-04
9	3.666439E-02	3.823307E-03	4.425608E-06	3.384504E-05
10	-4.022415E-08	7.889924E-09	1.845189E-11	-1.860146E-11

PERFORMANCE DATA

Compressor Model	7CB083LA01/04
Power Source	3PH 60Hz 440V
Suction Gas Superheat(K)	11.5
Sub Cooling(K)	8.5
Compressor Cooling	Natural Cooling
Refrigerant	R290

CAPACITY(W)

Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7	10	12
35.0	7,160	8,890	10,260	13,710	16,600	18,740	21,160	23,070
40.5	6,750	8,370	9,650	12,880	15,570	17,570	19,820	21,600
45.0	6,430	7,970	9,180	12,230	14,770	16,660	18,780	20,460
50.0	6,100	7,540	8,680	11,550	13,930	15,700	17,690	19,260
54.5		7,190	8,260	10,980	13,230	14,900	16,780	18,260
60.0			7,760	10,300	12,390	13,940	15,690	17,070
65.0				9,720	11,690	13,150	14,780	16,070

POWER(W)

Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7	10	12
35.0	2,940	3,010	3,040	3,090	3,110	3,110	3,110	3,110
40.5	3,260	3,330	3,370	3,430	3,450	3,460	3,460	3,460
45.0	3,560	3,640	3,680	3,740	3,770	3,780	3,780	3,780
50.0	3,930	4,010	4,050	4,120	4,160	4,170	4,180	4,180
54.5		4,370	4,410	4,490	4,530	4,550	4,560	4,570
60.0			4,920	5,010	5,060	5,080	5,100	5,110
65.0				5,510	5,570	5,600	5,630	5,640

CURRENT(A)

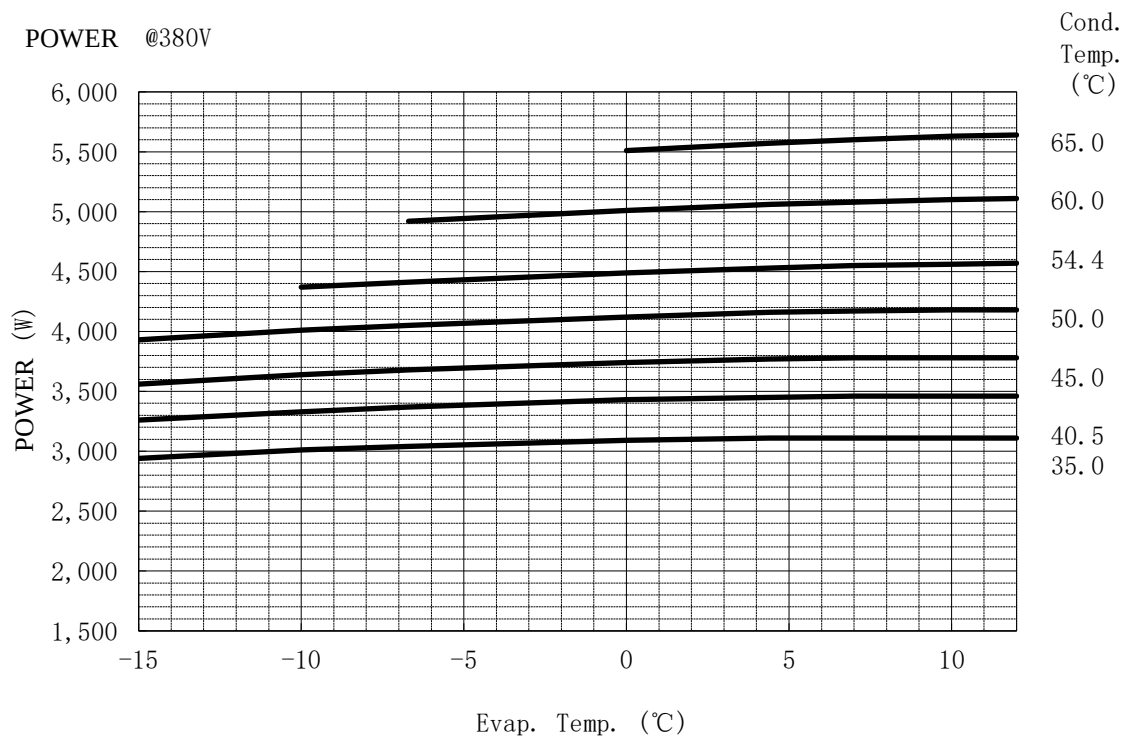
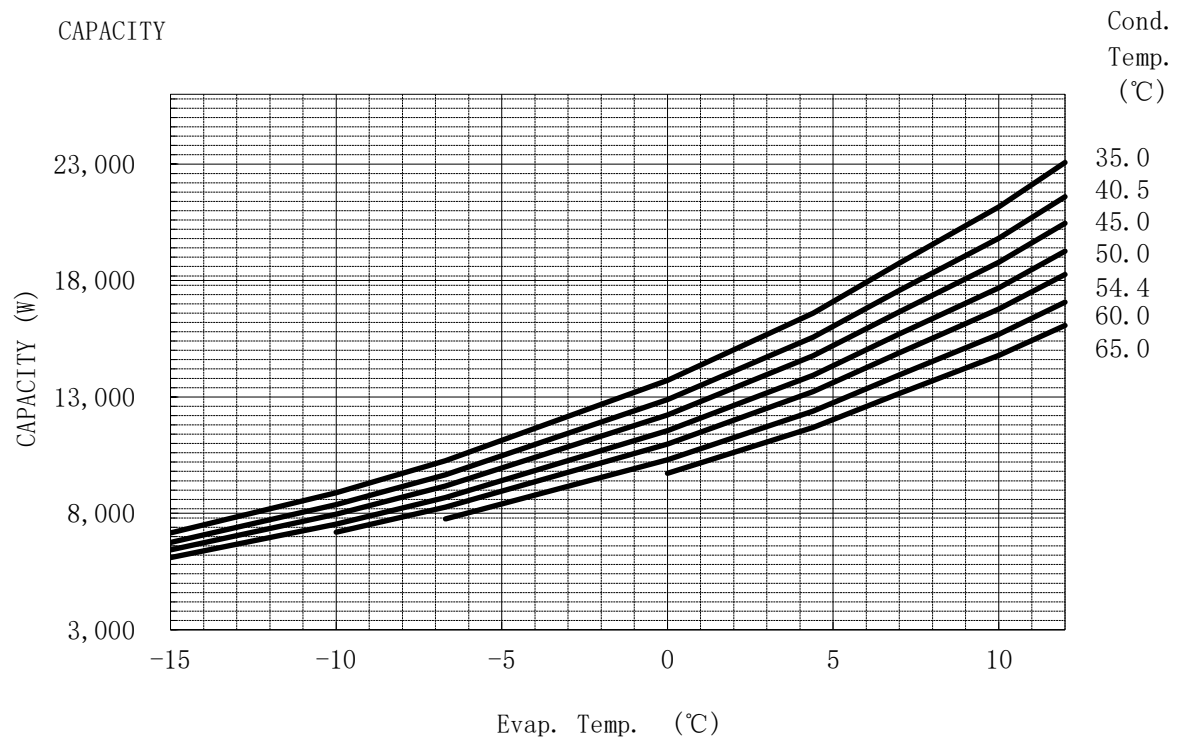
Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7	10	12
35.0	6.0	6.0	6.1	6.1	6.1	6.1	6.1	6.1
40.5	6.3	6.4	6.4	6.5	6.5	6.5	6.5	6.5
45.0	6.7	6.7	6.8	6.8	6.9	6.9	6.9	6.9
50.0	7.0	7.1	7.2	7.3	7.3	7.3	7.3	7.3
54.5		7.5	7.6	7.6	7.7	7.7	7.7	7.7
60.0			8.0	8.2	8.2	8.2	8.3	8.3
65.0				8.6	8.7	8.7	8.8	8.8

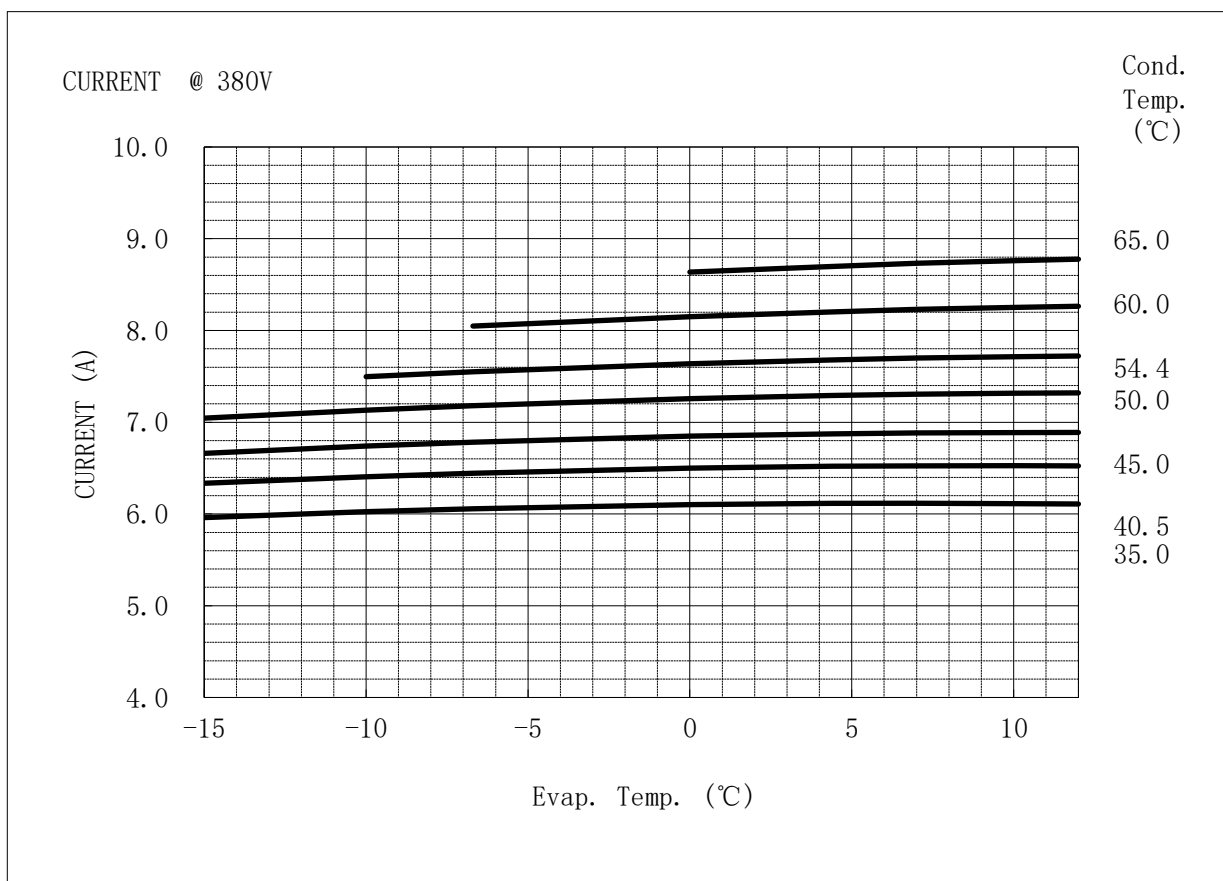
REFRIG FLOW(kg/h)

Condensing Temperature(°C)	Evaporating Temperature(°C)							
	-15	-10	-6.7	0	4.4	7	10	12
35.0	88	107	122	158	188	210	234	253
40.5	88	107	121	157	186	207	231	249
45.0	88	106	121	156	184	205	228	246
50.0	88	106	120	154	182	203	225	243
54.5		106	119	153	181	201	223	240
60.0			119	152	179	198	219	236
65.0				151	177	196	217	233

Compressor Model(Code)
Power Source

7CB083LA01/04
3PH 60Hz 440V





COEFFICIENTS OF PERFORMANCE CURVES

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 Power Source **3PH 60Hz 440V**
 Suction Gas Superheat (K) **11.5**
 Sub Cooling (K) **8.5**
 Compressor Cooling **Natural Cooling**
 Refrigerant **R290**

$X = C1 + C2*(S) + C3*D + C4*(S^2) + C5*(S*D) + C6*(D^2) + C7*(S^3) + C8*(D*S^2) + C9*(S*D^2) + C10*(D^3)$

X—CAPACITY(W) OR POWER(W) OR CURRENT(A) OR FLOW(kg/h)

S—EVAPORATING TEMP, °C

D—CONDENSING TEMP, °C

380V-50Hz	CAPACITY (W)	POWER (W)	CURRENT (A)	FLOW (kg/h)
1	2.013279E+04	2.109455E+03	4.299846E+00	1.668041E+02
2	9.339830E+02	7.582006E+00	1.985660E-03	7.334035E+00
3	-2.092413E+02	-1.513315E-01	3.375977E-02	-2.379215E-01
4	1.815982E+01	-4.117843E-01	-3.072833E-04	1.464925E-01
5	-1.098738E+01	-2.434947E-01	-8.849138E-05	-3.291271E-02
6	7.604263E-01	8.076925E-01	5.068040E-04	-1.094575E-04
7	1.161478E-01	-1.446007E-03	-4.565911E-07	9.668944E-04
8	-1.512836E-01	2.181636E-03	-5.111846E-07	-7.384904E-04
9	4.531058E-02	5.306496E-03	4.668982E-06	7.976914E-05
10	-6.768450E-08	1.870254E-08	1.072306E-11	-3.272318E-10

Section 5. Operating Envelope
Refrigerant : R290

