

COMPRESSOR DEFINITION

Designation	FMS U7C
Nominal Voltage/Frequency	230 V 90-315 Hz
Engineering Number	518000041

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-600a		
3 Nominal voltage and frequency	230 / 90-315	[V / Hz]	
4 Application type	Low-Medium Back Pressure (Hot Gas Defrost not allowed)		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°F)	
5 Motor type	BPM		
6 Starting torque	LST - Low Starting Torque		
7 Expansion device	Capillary tube		
8 Compressor cooling	Operating voltage range		
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	-	-	-
8.2 LBP (43°C Ambient temperature)	-	-	-
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	6.9	[kgf/cm ²] (98 psig)	/ °C - °F
9.2 Peak	7.8	[kgf/cm ²] (111 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/9	[hp]
2 Displacement	5.19	[cm ³] (0.317 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	15.000	
3 Lubricant charge	140	[ml] (4.73 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	3.46	[kg] (7.63 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	230 V 90-315 Hz 3~ (Three phase)	
2 Starting device type	Inverter	
2.1 Starting device	CF02F01L	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	CF02F01 L 00 XX F	
6 Start winding resistance	15.35	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	15.35	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (90/315 Hz)	2.17	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (90/315 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (90/315 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CE - IMTRO - TUV - UKCA	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @115V1800RPM			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°F)		
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%			
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
174	44	51	32	0.65	0.55	5.38	1.36	1.58	

TEST CONDITIONS: @115V2800RPM			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°F)		
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%			
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
268	68	79	48	0.94	0.84	5.56	1.40	1.63	

TEST CONDITIONS: @115V4000RPM			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°F)		
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%			
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
380	96	111	70	1.31	1.19	5.47	1.38	1.60	

TEST CONDITIONS: @115V6300RPM			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature)		-23.3°C (-9.94°F) 54.4°C (129.92°F)		
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%			
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
585	147	171	115	2.05	1.84	5.11	1.29	1.50	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V1800RPM		ASHRAE32 Static				(Condensing temperature 35°C (+95°F))				
Evaporating temperature	Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%			
	°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]
-35	(-31)	101	25	30	19	0.41	0.32	5.43	1.37	1.59
-30	(-22)	139	35	41	24	0.50	0.44	5.91	1.49	1.73
-25	(-13)	184	46	54	27	0.56	0.58	6.75	1.70	1.98
-20	(- 4)	238	60	70	30	0.61	0.75	7.88	1.99	2.31
-15	(+ 5)	304	76	89	33	0.65	0.96	9.23	2.33	2.70
-10	(+14)	383	96	112	35	0.70	1.21	10.72	2.70	3.14
-5	(+23)	478	121	140	39	0.76	1.51	12.29	3.10	3.60
0	(+32)	592	149	174	44	0.85	1.88	13.86	3.49	4.06

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V1800RPM		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	83	21	24	20	0.42	0.26	4.19	1.06	1.23
-30	(-22)	124	31	36	25	0.52	0.39	4.88	1.23	1.43
-25	(-13)	170	43	50	29	0.59	0.53	5.80	1.46	1.70
-20	(- 4)	224	56	66	32	0.65	0.70	6.87	1.73	2.01
-15	(+ 5)	289	73	85	36	0.70	0.91	8.03	2.02	2.35
-10	(+14)	367	92	107	40	0.77	1.16	9.20	2.32	2.70
-5	(+23)	459	116	134	45	0.85	1.45	10.31	2.60	3.02
0	(+32)	569	143	167	51	0.96	1.80	11.28	2.84	3.31

TEST CONDITIONS: @115V1800RPM		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	67	17	20	22	0.44	0.21	3.03	0.76	0.89
-30	(-22)	108	27	32	27	0.54	0.34	3.96	1.00	1.16
-25	(-13)	155	39	45	31	0.62	0.49	4.98	1.26	1.46
-20	(- 4)	208	52	61	35	0.69	0.65	6.03	1.52	1.77
-15	(+ 5)	271	68	79	39	0.76	0.85	7.03	1.77	2.06
-10	(+14)	345	87	101	44	0.84	1.09	7.91	1.99	2.32
-5	(+23)	434	109	127	50	0.94	1.37	8.59	2.16	2.52
0	(+32)	538	136	158	59	1.07	1.71	9.00	2.27	2.64

TEST CONDITIONS: @115V2200RPM		ASHRAE32 Static			(Condensing temperature 35°C (+95°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	122	31	36	24	0.50	0.38	5.09	1.28	1.49
-30	(-22)	167	42	49	28	0.58	0.52	6.07	1.53	1.78
-25	(-13)	223	56	65	31	0.66	0.70	7.31	1.84	2.14
-20	(- 4)	291	73	85	34	0.73	0.91	8.68	2.19	2.54
-15	(+ 5)	373	94	109	37	0.79	1.17	10.06	2.53	2.95
-10	(+14)	470	118	138	41	0.85	1.48	11.32	2.85	3.32
-5	(+23)	584	147	171	47	0.90	1.85	12.34	3.11	3.62
0	(+32)	717	181	210	56	0.94	2.27	12.99	3.27	3.81

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V2200RPM		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	103	26	30	25	0.51	0.32	4.22	1.06	1.24
-30	(-22)	149	37	44	29	0.60	0.47	5.06	1.28	1.48
-25	(-13)	204	52	60	33	0.69	0.64	6.15	1.55	1.80
-20	(- 4)	272	69	80	37	0.78	0.86	7.34	1.85	2.15
-15	(+ 5)	353	89	104	41	0.86	1.11	8.53	2.15	2.50
-10	(+14)	450	113	132	47	0.94	1.42	9.59	2.42	2.81
-5	(+23)	562	142	165	54	1.01	1.78	10.38	2.62	3.04
0	(+32)	692	175	203	64	1.08	2.20	10.79	2.72	3.16

TEST CONDITIONS: @115V2200RPM		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	87	22	26	25	0.53	0.27	3.46	0.87	1.01
-30	(-22)	131	33	38	31	0.63	0.41	4.21	1.06	1.23
-25	(-13)	185	47	54	36	0.72	0.58	5.18	1.30	1.52
-20	(- 4)	251	63	73	40	0.82	0.79	6.24	1.57	1.83
-15	(+ 5)	329	83	96	46	0.91	1.04	7.28	1.84	2.13
-10	(+14)	422	106	124	52	1.01	1.33	8.17	2.06	2.39
-5	(+23)	531	134	156	60	1.10	1.68	8.78	2.21	2.57
0	(+32)	657	166	193	71	1.19	2.08	8.99	2.27	2.63

TEST CONDITIONS: @115V2800RPM		ASHRAE32 Static			(Condensing temperature 35°C (+95°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	157	39	46	30	0.62	0.49	5.16	1.30	1.51
-30	(-22)	212	54	62	36	0.72	0.67	5.89	1.48	1.72
-25	(-13)	282	71	83	42	0.81	0.89	6.76	1.70	1.98
-20	(- 4)	368	93	108	47	0.89	1.16	7.81	1.97	2.29
-15	(+ 5)	472	119	138	52	0.97	1.48	9.05	2.28	2.65
-10	(+14)	596	150	175	57	1.05	1.88	10.51	2.65	3.08
-5	(+23)	744	187	218	61	1.12	2.35	12.22	3.08	3.58
0	(+32)	916	231	268	64	1.19	2.90	14.19	3.58	4.16

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V2800RPM		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	135	34	40	32	0.63	0.42	4.27	1.07	1.25
-30	(-22)	192	48	56	38	0.74	0.60	5.05	1.27	1.48
-25	(-13)	261	66	77	44	0.85	0.82	5.90	1.49	1.73
-20	(- 4)	346	87	101	50	0.95	1.09	6.83	1.72	2.00
-15	(+ 5)	448	113	131	57	1.05	1.41	7.86	1.98	2.30
-10	(+14)	569	143	167	63	1.15	1.79	9.02	2.27	2.64
-5	(+23)	712	179	209	69	1.24	2.25	10.33	2.60	3.03
0	(+32)	879	221	258	75	1.33	2.79	11.82	2.98	3.46

TEST CONDITIONS: @115V2800RPM		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	115	29	34	33	0.65	0.36	3.44	0.87	1.01
-30	(-22)	172	43	50	39	0.78	0.54	4.35	1.10	1.27
-25	(-13)	240	61	70	46	0.90	0.75	5.23	1.32	1.53
-20	(- 4)	323	81	95	53	1.02	1.01	6.09	1.54	1.79
-15	(+ 5)	422	106	124	61	1.13	1.33	6.97	1.76	2.04
-10	(+14)	539	136	158	68	1.24	1.70	7.89	1.99	2.31
-5	(+23)	676	170	198	76	1.35	2.14	8.86	2.23	2.60
0	(+32)	837	211	245	84	1.46	2.65	9.92	2.50	2.91

TEST CONDITIONS: @115V4000RPM		ASHRAE32 Static			(Condensing temperature 35°C (+95°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	222	56	65	45	0.85	0.69	4.97	1.25	1.46
-30	(-22)	301	76	88	53	1.03	0.94	5.71	1.44	1.67
-25	(-13)	404	102	118	61	1.16	1.27	6.60	1.66	1.93
-20	(- 4)	531	134	156	70	1.27	1.67	7.63	1.92	2.24
-15	(+ 5)	681	171	199	77	1.36	2.14	8.81	2.22	2.58
-10	(+14)	853	215	250	84	1.46	2.69	10.13	2.55	2.97
-5	(+23)	1047	264	307	90	1.58	3.31	11.62	2.93	3.40
0	(+32)	1263	318	370	94	1.74	4.00	13.26	3.34	3.88

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V4000RPM		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	197	50	58	47	0.88	0.62	4.23	1.07	1.24
-30	(-22)	273	69	80	55	1.06	0.86	5.01	1.26	1.47
-25	(-13)	374	94	110	64	1.21	1.17	5.85	1.48	1.72
-20	(- 4)	498	125	146	73	1.33	1.56	6.78	1.71	1.99
-15	(+ 5)	645	163	189	83	1.44	2.03	7.78	1.96	2.28
-10	(+14)	815	205	239	92	1.57	2.57	8.87	2.24	2.60
-5	(+23)	1008	254	295	100	1.72	3.19	10.05	2.53	2.94
0	(+32)	1222	308	358	108	1.92	3.87	11.31	2.85	3.31

TEST CONDITIONS: @115V4000RPM		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	164	41	48	48	0.92	0.51	3.38	0.85	0.99
-30	(-22)	239	60	70	57	1.11	0.75	4.25	1.07	1.25
-25	(-13)	339	85	99	66	1.26	1.06	5.13	1.29	1.50
-20	(- 4)	462	116	135	77	1.40	1.45	6.02	1.52	1.76
-15	(+ 5)	609	153	178	88	1.53	1.92	6.92	1.74	2.03
-10	(+14)	778	196	228	99	1.68	2.46	7.84	1.98	2.30
-5	(+23)	970	245	284	110	1.86	3.07	8.78	2.21	2.57
0	(+32)	1185	299	347	121	2.09	3.76	9.74	2.46	2.86

TEST CONDITIONS: @115V6300RPM		ASHRAE32 Static			(Condensing temperature 35°C (+95°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	337	85	99	68	1.27	1.06	4.93	1.24	1.44
-30	(-22)	463	117	136	87	1.56	1.45	5.36	1.35	1.57
-25	(-13)	609	153	178	100	1.78	1.91	6.14	1.55	1.80
-20	(- 4)	782	197	229	110	1.95	2.46	7.14	1.80	2.09
-15	(+ 5)	989	249	290	120	2.10	3.11	8.21	2.07	2.41
-10	(+14)	1238	312	363	133	2.26	3.90	9.22	2.32	2.70
-5	(+23)	1535	387	450	153	2.46	4.85	10.05	2.53	2.94
0	(+32)	1889	476	553	182	2.72	5.98	10.54	2.66	3.09

E - PERFORMANCE - CURVES

TEST CONDITIONS: @115V6300RPM		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	299	75	88	74	1.34	0.94	4.08	1.03	1.19
-30	(-22)	423	107	124	92	1.64	1.33	4.59	1.16	1.34
-25	(-13)	568	143	166	105	1.87	1.78	5.40	1.36	1.58
-20	(- 4)	741	187	217	116	2.06	2.33	6.39	1.61	1.87
-15	(+ 5)	948	239	278	128	2.22	2.98	7.40	1.87	2.17
-10	(+14)	1197	302	351	144	2.40	3.78	8.32	2.10	2.44
-5	(+23)	1496	377	438	167	2.62	4.73	8.99	2.26	2.63
0	(+32)	1851	466	542	199	2.90	5.87	9.28	2.34	2.72

TEST CONDITIONS: @115V6300RPM		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	260	66	76	79	1.43	0.81	3.28	0.83	0.96
-30	(-22)	383	97	112	97	1.74	1.20	3.88	0.98	1.14
-25	(-13)	527	133	155	111	1.98	1.66	4.74	1.20	1.39
-20	(- 4)	700	176	205	123	2.18	2.20	5.73	1.44	1.68
-15	(+ 5)	907	229	266	136	2.36	2.86	6.70	1.69	1.96
-10	(+14)	1157	292	339	155	2.55	3.65	7.52	1.89	2.20
-5	(+23)	1457	367	427	181	2.78	4.61	8.05	2.03	2.36
0	(+32)	1814	457	531	217	3.08	5.75	8.16	2.06	2.39

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard ES/FMS		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 75° up		
3.2 DISCHARGE	4.94 +0.08/-0.08	[mm]	(0.194" +0.003"/-0.003")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 75° up		
3.3 PROCESS	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted 75° up		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		