

INTERNATIONAL TEMPERATURE – PRESSURE

°C	°F	REFRIGERANT											
		R-22 (V)		134a (J)		410A (Z)		507 (P)		R-717 (A)		R-744	
		psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
-50	-58.0	10.9	276	21.2	539	1.1	0.08	4.4	112	17.9	454	84.3	5.81
-48	-54.4	8.8	224	20.2	512	2.8	0.19	1.8	45	16.4	416	92.6	6.38
-46	-50.8	6.6	168	19.0	482	4.5	0.31	0.5	0.04	14.7	374	101.4	6.99
-44	-47.2	4.2	107	17.7	450	6.5	0.45	2.0	0.14	12.9	328	110.7	7.63
-42	-43.6	1.6	41	16.3	415	8.5	0.59	3.7	0.25	10.9	277	120.6	8.31
-40	-40.0	0.6	0.04	14.8	376	10.8	0.74	5.4	0.37	8.8	222	131.0	9.03
-38	-36.4	2.0	0.14	13.1	334	13.1	0.91	7.3	0.50	6.4	162	142.0	9.79
-36	-32.8	3.6	0.25	11.3	288	15.7	1.08	9.3	0.64	3.8	97	153.7	10.6
-34	-29.2	5.3	0.37	9.4	239	18.5	1.27	11.4	0.79	1.0	25	165.9	11.4
-32	-25.6	7.1	0.49	7.3	185	21.4	1.47	13.7	0.95	1.0	0.07	178.8	12.3
-30	-22.0	9.1	0.63	5.0	127	24.5	1.69	16.2	1.12	2.6	0.18	192.4	13.3
-28	-18.4	11.1	0.77	2.5	65	27.8	1.92	18.8	1.30	4.4	0.30	206.6	14.2
-26	-14.8	13.4	0.92	0.0	0.00	31.4	2.16	21.6	1.49	6.3	0.43	221.6	15.3
-24	-11.2	15.7	1.08	1.4	0.10	35.2	2.42	24.5	1.69	8.3	0.57	237.3	16.4
-22	-7.6	18.2	1.26	2.9	0.20	39.2	2.70	27.6	1.90	10.5	0.72	253.8	17.5
-20	-4.0	20.9	1.44	4.6	0.31	43.4	2.99	30.9	2.13	12.9	0.89	271.0	18.7
-19	-2.2	22.3	1.54	5.4	0.37	45.6	3.15	32.6	2.25	14.1	0.97	279.9	19.3
-18	-0.4	23.7	1.63	6.3	0.43	47.9	3.30	34.4	2.37	15.4	1.06	289.0	19.9
-17	1.4	25.2	1.74	7.2	0.50	50.3	3.47	36.2	2.50	16.7	1.15	298.3	20.6
-16	3.2	26.7	1.84	8.1	0.56	52.7	3.63	38.1	2.63	18.1	1.25	307.8	21.2
-15	5.0	28.3	1.95	9.1	0.63	55.2	3.80	40.1	2.76	19.6	1.35	317.6	21.9
-14	6.8	29.9	2.06	10.1	0.69	57.7	3.98	42.0	2.90	21.0	1.45	327.5	22.6
-13	8.6	31.5	2.17	11.1	0.77	60.3	4.16	44.1	3.04	22.6	1.56	337.7	23.3
-12	10.4	33.2	2.29	12.2	0.84	63.0	4.35	46.2	3.18	24.1	1.66	348.0	24.0
-11	12.2	35.0	2.41	13.3	0.91	65.8	4.54	48.3	3.33	25.8	1.78	358.6	24.7
-10	14.0	36.8	2.53	14.4	0.99	68.6	4.73	50.5	3.48	27.5	1.89	369.5	25.5
-9	15.8	38.6	2.66	15.6	1.07	71.6	4.93	52.8	3.64	29.2	2.01	380.5	26.2
-8	17.6	40.5	2.79	16.8	1.16	74.6	5.14	55.1	3.80	31.0	2.14	391.8	27.0
-7	19.4	42.4	2.93	18.0	1.24	77.6	5.35	57.5	3.96	32.9	2.27	403.3	27.8
-6	21.2	44.4	3.06	19.3	1.33	80.8	5.57	59.9	4.13	34.8	2.40	415.1	28.6
-5	23.0	46.5	3.20	20.6	1.42	84.0	5.79	62.4	4.30	36.8	2.53	427.1	29.4
-4	24.8	48.6	3.35	22.0	1.51	87.3	6.02	65.0	4.48	38.8	2.67	439.3	30.3
-3	26.6	50.7	3.50	23.3	1.61	90.7	6.26	67.6	4.66	40.9	2.82	451.8	31.2
-2	28.4	52.9	3.65	24.8	1.71	94.2	6.50	70.3	4.85	43.1	2.97	464.5	32.0
-1	30.2	55.2	3.81	26.3	1.81	97.8	6.74	73.0	5.04	45.3	3.12	477.5	32.9
0	32.0	57.5	3.97	27.8	1.91	101.4	6.99	75.9	5.23	47.6	3.28	490.8	33.8
1	33.8	59.9	4.13	29.3	2.02	105.2	7.25	78.8	5.43	49.9	3.44	504.3	34.8
2	35.6	62.3	4.30	30.9	2.13	109.0	7.52	81.7	5.63	52.4	3.61	518.1	35.7
3	37.4	64.8	4.47	32.6	2.25	113.0	7.79	84.7	5.84	54.9	3.78	532.1	36.7
4	39.2	67.4	4.65	34.3	2.36	117.0	8.07	87.8	6.06	57.5	3.96	546.4	37.7
5	41.0	70.0	4.83	36.0	2.48	121.1	8.35	91.0	6.28	60.1	4.14	561.0	38.7
6	42.8	72.7	5.01	37.8	2.61	125.3	8.64	94.3	6.50	62.8	4.33	575.9	39.7
7	44.6	75.4	5.20	39.6	2.73	129.6	8.94	97.6	6.73	65.6	4.53	591.1	40.8
8	46.4	78.3	5.40	41.5	2.86	134.0	9.24	101.0	6.96	68.5	4.72	606.5	41.8
9	48.2	81.1	5.59	43.5	3.00	138.5	9.55	104.5	7.20	71.5	4.93	622.3	42.9
10	50.0	84.1	5.80	45.4	3.13	143.2	9.87	108.0	7.45	74.5	5.14	638.3	44.0
11	51.8	87.1	6.00	47.5	3.27	147.9	10.2	111.6	7.70	77.6	5.35	654.6	45.1
12	53.6	90.1	6.22	49.6	3.42	152.7	10.5	115.3	7.95	80.8	5.57	671.3	46.3
13	55.4	93.3	6.43	51.7	3.56	157.6	10.9	119.1	8.21	84.1	5.80	688.3	47.5
14	57.2	96.5	6.65	53.9	3.72	162.7	11.2	123.0	8.48	87.5	6.03	705.5	48.6
15	59.0	99.8	6.88	56.1	3.87	167.8	11.6	127.0	8.75	91.0	6.27	723.1	49.9
16	60.8	103.1	7.11	58.4	4.03	173.1	11.9	131.0	9.03	94.5	6.52	741.1	51.1
17	62.6	106.6	7.35	60.8	4.19	178.5	12.3	135.1	9.32	98.2	6.77	759.3	52.4
18	64.4	110.1	7.59	63.2	4.36	183.9	12.7	139.3	9.61	101.9	7.03	778.0	53.6
19	66.2	113.6	7.84	65.7	4.53	189.5	13.1	143.6	9.90	105.7	7.29	796.9	54.9
20	68.0	117.3	8.09	68.2	4.70	195.3	13.5	148.0	10.2	109.7	7.56	816.2	56.3
21	69.8	121.0	8.34	70.8	4.88	201.1	13.9	152.5	10.5	113.7	7.84	835.9	57.6
22	71.6	124.8	8.61	73.5	5.07	207.1	14.3	157.1	10.8	117.8	8.12	856.0	59.0
23	73.4	128.7	8.87	76.2	5.25	213.2	14.7	161.7	11.1	122.1	8.42	876.4	60.4
24	75.2	132.7	9.15	79.0	5.44	219.4	15.1	166.5	11.5	126.4	8.71	897.3	61.9
25	77.0	136.7	9.43	81.8	5.64	225.7	15.6	171.3	11.8	130.8	9.02	918.5	63.3
26	78.8	140.8	9.71	84.7	5.84	232.2	16.0	176.3	12.2	135.4	9.33	940.2	64.8
27	80.6	145.0	10.0	87.7	6.05	238.8	16.5	181.3	12.5	140.0	9.65	962.3	66.3
28	82.4	149.3	10.3	90.7	6.26	245.5	16.9	186.5	12.9	144.8	10.0	984.9	67.9
29	84.2	153.7	10.6	93.8	6.47	252.3	17.4	191.7	13.2	149.6	10.3	1007.9	69.5
30	86.0	158.2	10.9	97.0	6.69	259.3	17.9	197.1	13.6	154.6	10.7	1031.6	71.1
31	87.8	162.7	11.2	100.3	6.91	266.5	18.4	202.5	14.0	159.7	11.0	1055.3	72.8
32	89.6	167.4	11.5	103.6	7.14	273.7	18.9	208.1	14.3	164.9	11.4	**	**
33	91.4	172.1	11.9	107.0	7.37	281.1	19.4	213.7	14.7	170.2	11.7	**	**
34	93.2	176.9	12.2	110.4	7.61	288.7	19.9	219.5	15.1	175.7	12.1	**	**
35	95.0	181.8	12.5	114.0	7.86	296.4	20.4	225.4	15.5	181.2	12.5	**	**
36	96.8	186.8	12.9	117.6	8.11	304.2	21.0	231.4	16.0	186.9	12.9	**	**
37	98.6	191.9	13.2	121.2	8.36	312.2	21.5	237.5	16.4	192.7	13.3	**	**
38	100.4	197.1	13.6	125.0	8.62	320.4	22.1	243.7	16.8	198.7	13.7	**	**
39	102.2	202.4	14.0	128.8	8.88	328.7	22.7	250.0	17.2	204.7	14.1	**	**
40	104.0	207.7	14.3	132.8	9.15	337.1	23.2	256.5	17.7	210.9	14.5	**	**
41	105.8	213.2	14.7	136.7	9.43	345.7	23.8	263.0	18.1	217.2	15.0	**	**
42	107.6	218.8	15.1	140.8	9.71	354.5	24.4	269.7	18.6	223.7	15.4	**	**
43	109.4	224.5	15.5	145.0	10.0	363.4	25.1	276.5	19.1	230.3	15.9	**	**
44	111.2	230.2	15.9	149.2	10.3	372.5	25.7	283.5	19.5	237.0	16.3	**	**
45	113.0	236.1	16.3	153.5	10.6	381.8	26.3	290.5	20.0	243.9	16.8	**	**
46	114.8	242.1	16.7	158.0	10.9	391.2	27.0	297.7	20.5	250.9	17.3	**	**
47	116.6	248.2	17.1	162.4	11.2	400.8	27.6	305.0	21.0	258.0	17.8	**	**
48	118.4	254.4	17.5	167.0	11.5	410.6	28.3	312.5	21.5	265.3	18.3	**	**
49	120.2	260.7	18.0	171.7	11.8	420.5	29.0	320.1	22.1	272.7	18.8	**	**
50	122.0	267.1	18.4	176.5	12.2	430.7	29.7	327.8	22.6	280.3	19.3	**	**
52	125.6	280.2	19.3	186.2	12.8	451.5	31.1	343.6	23.7	295.9	20.4	**	**
54	129.2	293.8	20.3	196.4	13.5	473.0	32.6	360.0	24.8	312.2	21.5	**	**
56	132.8	307.9	21.2	207.0	14.3	495.4	34.2	377.1	26.0	329.0	22.7	**	**
58	136.4	322.4	22.2	217.9	15.0	518.5	35.8	394.7	27.2	346.5	23.9	**	**
60	140.0	337.4	23.3	229.2	15.8	542.5	37.4	413.0	28.5	364.7	25.1	**	**
62	143.6	352.9	24.3	241.0	16.6	567.4	39.1	431.9	29.8	383.5	26.4	**	**
64	147.2	368.9	25.4	253.2	17.5	593.2	40.9	451.6	31.1	403.0	27.8	**	**
66	150.8												

°C	°F	REFRIGERANT											
		401A (X)		404A (S)		407C (N)		408A (S)		409A (J)		R-438A (V)	
		psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
-50	-58.0	20.6	523	6.0	152	15.1	383	7.5	189	21.2	538	15.4	391
-48	-54.4	19.5	494	3.5	88	13.3	339	5.1	130	20.1	511	13.7	348
-46	-50.8	18.2	463	0.8	19	11.4	290	2.6	65	19.0	481	11.8	300
-44	-47.2	16.9	429	1.1	0.07	9.4	238	0.1	0.01	17.7	449	9.8	249
-42	-43.6	15.4	392	2.6	0.18	7.1	180	1.5	0.11	16.3	414	7.6	193
-40	-40.0	13.8	351	4.3	0.30	4.6	117	3.1	0.21	14.8	376	5.2	132
-38	-36.4	12.1	307	6.1	0.42	2.0	50	4.8	0.33	13.1	334	2.6	66
-36	-32.8	10.2	260	8.0	0.55	0.5	0.03	6.6	0.45	11.4	289	0.1	0.01
-34	-29.2	8.2	208	10.1	0.70	2.0	0.14	8.5	0.58	9.4	240	1.6	0.11
-32	-25.6	6.0	152	12.3	0.85	3.6	0.25	10.5	0.73	7.3	187	3.2	0.22
-30	-22.0	3.6	92	14.6	1.01	5.4	0.37	12.7	0.88	5.1	129	4.9	0.34
-28	-18.4	1.1	28	17.1	1.18	7.3	0.51	15.1	1.04	-1.3	68	6.8	0.47
-26	-14.8	0.8	0.06	19.8	1.37	9.4	0.65	17.5	1.21	0.1	1.5	8.7	0.60
-24	-11.2	2.3	0.16	22.6	1.56	11.6	0.80	20.2	1.39	1.3	0.09	10.9	0.75
-22	-7.6	3.8	0.26	25.7	1.77	13.9	0.96	23.0	1.59	2.8	0.19	13.1	0.91
-20	-4.0	5.5	0.38	28.8	1.99	16.4	1.13	26.0	1.79	4.4	0.30	15.6	1.07
-19	-2.2	6.3	0.44	30.5	2.10	17.8	1.22	27.5	1.90	5.2	0.36	16.9	1.16
-18	-0.4	7.2	0.50	32.2	2.22	19.1	1.32	29.1	2.01	6.1	0.42	18.2	1.25
-17	1.4	8.1	0.56	34.0	2.34	20.5	1.42	30.8	2.12	7.0	0.48	19.5	1.35
-16	3.2	9.1	0.63	35.8	2.47	22.0	1.52	32.5	2.24	7.9	0.54	20.9	1.44
-15	5.0	10.1	0.70	37.7	2.60	23.5	1.62	34.2	2.36	8.8	0.61	22.4	1.54
-14	6.8	11.1	0.77	39.6	2.73	25.0	1.73	36.0	2.48	9.8	0.68	23.9	1.64
-13	8.6	12.2	0.84	41.5	2.86	26.6	1.83	37.8	2.61	10.8	0.75	25.4	1.75
-12	10.4	13.3	0.91	43.6	3.00	28.3	1.95	39.7	2.74	11.9	0.82	27.0	1.86
-11	12.2	14.4	0.99	45.6	3.15	29.9	2.06	41.6	2.87	12.9	0.89	28.6	1.97
-10	14.0	15.5	1.07	47.8	3.29	31.7	2.18	43.6	3.01	14.1	0.97	30.3	2.09
-9	15.8	16.7	1.15	50.0	3.45	33.5	2.31	45.7	3.15	15.2	1.05	32.0	2.21
-8	17.6	17.9	1.24	52.2	3.60	35.3	2.44	47.8	3.29	16.4	1.13	33.8	2.33
-7	19.4	19.2	1.32	54.5	3.76	37.2	2.57	49.9	3.44	17.6	1.21	35.6	2.45
-6	21.2	20.5	1.41	56.9	3.92	39.2	2.70	52.1	3.59	18.8	1.30	37.5	2.58
-5	23.0	21.8	1.51	59.3	4.09	41.2	2.84	54.4	3.75	20.1	1.39	39.4	2.72
-4	24.8	23.2	1.60	61.8	4.26	43.3	2.98	56.7	3.91	21.4	1.48	41.4	2.85
-3	26.6	24.6	1.70	64.3	4.44	45.4	3.13	59.1	4.07	22.8	1.57	43.5	3.00
-2	28.4	26.1	1.80	67.0	4.62	47.6	3.28	61.5	4.24	24.2	1.67	45.6	3.14
-1	30.2	27.6	1.90	69.6	4.80	49.8	3.43	64.0	4.41	25.6	1.77	47.7	3.29
0	32.0	29.1	2.01	72.4	4.99	52.1	3.59	66.6	4.59	27.1	1.87	49.9	3.44
1	33.8	30.7	2.12	75.2	5.18	54.5	3.76	69.2	4.77	28.6	1.97	52.2	3.60
2	35.6	32.3	2.23	78.1	5.38	56.9	3.93	71.9	4.96	30.2	2.08	54.5	3.76
3	37.4	34.0	2.34	81.0	5.58	59.4	4.10	74.6	5.15	31.8	2.19	56.9	3.93
4	39.2	35.7	2.46	84.0	5.79	62.0	4.27	77.4	5.34	33.4	2.31	59.4	4.09
5	41.0	37.5	2.58	87.1	6.01	64.6	4.46	80.3	5.54	35.1	2.42	61.9	4.27
6	42.8	39.3	2.71	90.3	6.22	67.3	4.64	83.3	5.74	36.9	2.54	64.5	4.45
7	44.6	41.1	2.84	93.5	6.45	70.1	4.83	86.3	5.95	38.6	2.66	67.2	4.63
8	46.4	43.0	2.97	96.8	6.67	72.9	5.03	89.4	6.16	40.5	2.79	69.9	4.82
9	48.2	45.0	3.10	100.2	6.91	75.9	5.23	92.5	6.38	42.4	2.92	72.7	5.01

↕ **DEW POINT** ↕

↕ **BUBBLE POINT** ↕

10	50.0	57.9	3.99	105.3	7.26	97.9	6.75	96.8	6.67	60.9	4.20	91.1	6.28
11	51.8	60.2	4.15	108.8	7.50	101.3	6.99	100.1	6.90	63.2	4.36	94.3	6.50
12	53.6	62.5	4.31	112.5	7.75	104.8	7.23	103.5	7.14	65.6	4.52	97.6	6.73
13	55.4	64.9	4.47	116.2	8.01	108.4	7.48	106.9	7.37	68.0	4.69	100.9	6.96
14	57.2	67.3	4.64	119.9	8.27	112.1	7.73	110.5	7.62	70.5	4.86	104.4	7.19
15	59.0	69.8	4.81	123.8	8.54	115.8	7.99	114.1	7.87	73.0	5.03	107.9	7.44
16	60.8	72.3	4.99	127.8	8.81	119.7	8.25	117.8	8.12	75.6	5.21	111.4	7.68
17	62.6	75.0	5.17	131.8	9.09	123.6	8.52	121.5	8.38	78.3	5.40	115.1	7.94
18	64.4	77.6	5.35	135.9	9.37	127.6	8.79	125.4	8.64	81.0	5.58	118.8	8.19
19	66.2	80.3	5.54	140.1	9.66	131.6	9.08	129.3	8.91	83.8	5.77	122.7	8.46
20	68.0	83.1	5.73	144.4	9.96	135.8	9.36	133.3	9.19	86.6	5.97	126.6	8.73
21	69.8	86.0	5.93	148.8	10.3	140.1	9.66	137.4	9.47	89.5	6.17	130.6	9.00
22	71.6	88.9	6.13	153.3	10.6	144.4	9.95	141.5	9.76	92.4	6.37	134.6	9.28
23	73.4	91.8	6.33	157.9	10.9	148.8	10.26	145.8	10.1	95.4	6.58	138.8	9.57
24	75.2	94.8	6.54	162.5	11.2	153.3	10.57	150.1	10.4	98.5	6.79	143.0	9.86
25	77.0	97.9	6.75	167.3	11.5	158.0	10.89	154.5	10.7	101.6	7.01	147.3	10.2
26	78.8	101.1	6.97	172.1	11.9	162.7	11.21	159.1	11.0	104.8	7.23	151.7	10.5
27	80.6	104.3	7.19	177.1	12.2	167.5	11.55	163.7	11.3	108.1	7.45	156.2	10.8
28	82.4	107.6	7.42	182.1	12.6	172.4	11.88	168.3	11.6	111.4	7.68	160.8	11.1
29	84.2	110.9	7.65	187.2	12.9	177.3	12.23	173.1	11.9	114.8	7.92	165.5	11.4
30	86.0	114.4	7.88	192.5	13.3	182.4	12.58	178.0	12.3	118.3	8.16	170.3	11.7
31	87.8	117.8	8.12	197.8	13.6	187.6	12.94	183.0	12.6	121.8	8.40	175.1	12.1
32	89.6	121.4	8.37	203.3	14.0	192.9	13.30	188.0	13.0	125.4	8.65	180.1	12.4
33	91.4	125.0	8.62	208.8	14.4	198.3	13.67	193.2	13.3	129.1	8.90	185.1	12.8
34	93.2	128.7	8.87	214.4	14.8	203.8	14.05	198.4	13.7	132.8	9.16	190.3	13.1
35	95.0	132.5	9.13	220.2	15.2	209.4	14.44	203.8	14.0	136.6	9.42	195.5	13.5
36	96.8	136.3	9.40	226.1	15.6	215.1	14.83	209.2	14.4	140.5	9.69	200.9	13.8
37	98.6	140.2	9.67	232.0	16.0	220.9	15.23	214.8	14.8	144.4	9.96	206.3	14.2
38	100.4	144.2	9.94	238.1	16.4	226.8	15.64	220.4	15.2	148.5	10.2	211.8	14.6
39	102.2	148.3	10.2	244.3	16.8	232.8	16.05	226.2	15.6	152.6	10.5	217.5	15.0
40	104.0	152.4	10.5	250.6	17.3	239.0	16.48	232.0	16.0	156.7	10.8	223.2	15.4
41	105.8	156.6	10.8	257.1	17.7	245.2	16.91	238.0	16.4	161.0	11.1	229.1	15.8
42	107.6	160.9	11.1	263.6	18.2	251.6	17.35	244.1	16.8	165.3	11.4	235.0	16.2
43	109.4	165.3	11.4	270.3	18.6	258.1	17.79	250.3	17.3	169.7	11.7	241.1	16.6
44	111.2	169.8	11.7	277.1	19.1	264.7	18.25	256.6	17.7	174.2	12.0	247.3	17.0
45	113.0	174.3	12.0	284.0	19.6	271.4	18.71	263.0	18.1	178.7	12.3	253.6	17.5
46	114.8	178.9	12.3	291.0	20.1	278.2	19.18	269.5	18.6	183.3	12.6	260.0	17.9
47	116.6	183.6	12.7	298.2	20.6	285.1	19.66	276.1	19.0	188.1	13.0	266.5	18.4
48	118.4	188.4	13.0	305.5	21.1	292.2	20.15	282.8	19.5	192.8	13.3	273.1	18.8
49	120.2	193.2	13.3	312.9	21.6	299.4	20.64	289.7	20.0	197.7	13.6	279.8	19.3
50	122.0	198.2	13.7	320.4	22.1	306.7	21.15	296.7	20.5	202.7	14.0	286.7	19.8
52	125.6	208.3	14.4	335.9	23.2	321.7	22.18	311.0	21.4	212.8	14.7	300.7	20.7
54	129.2	218.8	15.1	352.0	24.3	337.2	23.25	325.8	22.5	223.4	15.4	315.3	21.7
56	132.8	229.7	15.8	368.6	25.4	353.3	24.36	341.1	23.5	234.2	16.1	330.3	22.8
58	136.4	240.9	16.6	385.9	26.6	369.8	25.50	356.9	24.6	245.4	16.9	345.8	23.8
60	140.0	252.5	17.4	403.7	27.								