

ASHRAE Class	Low-Pressure Refrigerant <30 psig at 104°F condensing temperature			Medium-Pressure Refrigerant 30 to 155 psig at 104°F condensing temperature								ASHRAE Class
	B1	B1	A2L	A1	A1	A1		A1	A3	A2L	A2L	
GWP	77	1030	4.7-7	10,900	609	1558		1430	3	4	6	GWP
	HCFC	HFC	HFO	CFC	HCFC	HCFC R-409A		HFC	Hydrocarbon Isobutane	HFO	HFO	
°F	R-123	R-245fa	R-1233zd	R-12	R-124	Bubble* Liquid	Dew* Vapor	R-134a	R-600a	R-1234yf	R-1234ze	°F
-40°	*	-13.9	-28.3	-11.0	-22.1	6.7	-14.8	-14.8	-21.6	-11.5	-19.1	-40°
-35°	*	-13.7	-28.0	-8.4	-20.9	3.5	-12.5	-12.5	-20.4	-8.9	-17.4	-35°
-30°	*	-13.5	-27.6	-5.5	-19.4	0.0	-9.9	-9.8	-18.9	-6.0	-15.4	-30°
-25°	*	-13.2	-27.2	-2.4	-11.8	1.9	-7.0	-6.9	-17.4	-2.8	-13.3	-25°
-20°	-27.8	-13.0	-26.7	0.5	-16.0	4.0	-3.8	-3.1	-15.6	0.4	-10.9	-20°
-15°	-27.4	-12.7	-26.1	2.4	-14.0	6.3	2.0	-0.1	-13.7	2.3	-8.2	-15°
-10°	-26.9	-12.2	-25.5	4.5	-11.8	8.8	1.8	1.9	-11.5	4.4	-5.3	-10°
-5°	-26.4	-11.9	-24.7	6.7	-9.3	11.6	4.0	4.1	-9.2	6.7	-2.0	-5°
0°	-25.9	-11.4	-23.9	9.1	-6.6	14.6	6.3	6.5	-6.6	9.1	-0.8	0°
5°	-25.2	-11.0	-23.0	11.7	-3.6	17.8	8.8	9.1	-3.8	12.0	2.7	5°
10°	-24.5	-10.4	-22.0	14.6	-0.3	21.3	11.6	11.9	-0.7	14.9	4.8	10°
15°	-23.8	-9.5	-20.8	17.7	1.6	25.1	14.7	15.0	1.3	18.1	7.2	15°
20°	-22.8	-9.1	-19.5	21.0	3.6	29.2	18.0	18.4	3.1	21.6	9.7	20°
25°	-21.8	-8.0	-18.1	24.6	5.7	33.6	21.6	22.1	5.0	25.4	12.5	25°
30°	-20.7	-7.5	-16.5	28.4	8.0	38.4	25.5	26.1	7.1	29.4	15.4	30°
35°	-19.5	-6.8	-14.7	32.5	10.5	43.4	29.7	30.4	9.4	33.8	18.7	35°
40°	-18.1	-5.6	-12.8	36.9	13.2	48.9	34.2	35.0	11.8	38.4	22.2	40°
45°	-16.6	-4.2	-10.7	41.6	16.1	54.7	39.1	40.1	14.4	43.4	26.0	45°
50°	-14.9	-2.8	-8.3	46.6	19.3	60.9	44.3	45.4	17.2	48.8	30.0	50°
55°	-13.0	-1.8	-5.8	51.9	22.7	67.5	49.9	51.2	20.2	54.5	34.4	55°
60°	-11.2	0.0	-3.0	57.6	26.3	74.5	55.9	57.4	23.5	60.6	39.1	60°
65°	-8.9	1.9	0.0	63.7	30.2	81.9	62.3	64.0	26.9	67.0	44.1	65°
70°	-6.5	3.5	1.6	70.1	34.4	89.8	69.2	71.1	30.6	73.9	49.5	70°
75°	-4.1	5.9	3.4	76.8	38.9	98.2	76.5	78.7	34.5	81.3	55.2	75°
80°	-1.2	7.9	5.3	84.0	43.7	107	84.2	86.7	38.6	89.0	61.3	80°
85°	0.9	10.2	7.3	91.6	48.8	116	92.5	95.2	43.0	97.2	67.8	85°
90°	2.5	12.8	9.5	99.6	54.3	126	101	104	47.7	106	74.8	90°
95°	4.3	15.8	11.9	108	60.1	137	111	114	52.7	115	82.1	95°
100°	6.1	19.0	14.4	117	66.2	148	120	124	57.9	125	89.9	100°
104°	7.7	21.3	16.6	124	71.4	157	129	133	62.3	133	96.5	104°
105°	8.1	23.0	17.1	126	72.7	159	131	135	63.4	135	98.2	105°
110°	10.3	26.0	20.0	136	79.6	171	142	146	69.3	146	107	110°
115°	12.6	30.0	23.1	146	86.9	184	153	158	75.4	157	116	115°
120°	15.1	33.0	26.5	157	94.6	197	166	171	81.9	169	126	120°
125°	17.8	36.0	30.0	169	103	211	179	185	88.7	182	136	125°
130°	20.6	41.0	33.8	181	111	226	192	199	95.8	195	147	130°
135°	23.6	46.0	37.8	193	120	241	207	214	103	209	158	135°
140°	26.8	52.0	42.0	206	130	257	222	229	111	223	171	140°
145°	30.2	57.0	46.5	220	140	274	237	246	120	239	183	145°
150°	33.9	61.0	51.3	234	150	291	254	263	128	255	196	150°



* See page 8 for further detail on Bubble/Dew

High-Pressure Refrigerant 155 to 340psig at 104°F condensing temperature

Very-High
Pressure over
340 psig at 104°F
condensing
temperature

Remove this back page and bring with you to the examination.

ASHRAE Class	A1	A1		A1		A1		A1		A3		A1	B2	A1	ASHRAE Class
GWP	1810	3920		1770		2730		2530		<5		2090	0	1 (base)	GWP
°F	HCFC R-22	HFC R-404A		HFC R-407C		HFC R-422D		HFC R-422B		Hydrocarbon R-441A		HFC R-410A	Ammonia R-717	CO ₂ R-744	°F
		Bubble Liquid	Dew Vapor	Bubble Liquid	Dew Vapor	Bubble Liquid	Dew Vapor	Bubble Liquid	Dew Vapor	Bubble Liquid	Dew Vapor				
-40°	0.6	4.9	4.3	2.7	-4.6	2.4	-2.3	0.9	-2.7	4	2	11	-9	132	-40°
-35°	2.6	7.5	6.8	5.1	-0.9	4.6	0.8	3.0	-0.9	8	4	14	-6	147	-35°
-30°	4.9	10.3	9.6	7.7	1.6	7.1	3.0	5.4	1.1	9	5	18	-2	163	-30°
-25°	7.4	13.4	12.7	10.6	3.9	9.9	5.4	7.9	3.2	13	9	22	1	181	-25°
-20°	10.2	16.8	16.0	13.7	6.5	12.9	8.1	10.7	5.7	14	10	26	4	200	-20°
-15°	13.2	20.5	19.7	17.2	9.3	16.2	11.0	13.8	8.3	17	14	31	5	221	-15°
-10°	16.5	24.6	23.6	20.9	12.3	19.8	14.3	17.1	11.3	18	15	36	9	243	-10°
-5°	20.1	28.9	27.9	25.0	15.7	23.7	17.8	20.7	14.5	25	21	42	12	266	-5°
0°	24.0	33.7	32.6	29.5	19.4	27.9	21.7	24.7	18.0	28	24	48	16	291	0°
5°	28.3	38.8	37.7	34.3	23.5	32.5	25.8	29.0	21.9	33	27	55	20	318	5°
10°	32.8	44.3	43.1	39.5	27.9	37.5	30.4	33.6	26.1	38	33	62	24	346	10°
15°	37.8	50.2	49.0	45.2	32.7	42.8	35.3	38.6	30.6	44	35	70	28	376	15°
20°	43.1	56.6	55.3	51.2	37.9	48.5	40.7	43.9	35.5	49	44	78	33	407	20°
25°	48.8	63.4	62.2	57.7	43.5	54.7	46.4	49.7	40.8	54	47	87	39	441	25°
30°	55.0	70.7	69.3	64.7	49.6	61.3	52.6	55.9	46.6	66	51	97	45	476	30°
35°	61.5	78.6	77.1	72.2	56.1	68.4	59.3	62.5	52.7	66	60	107	51	513	35°
40°	68.6	86.9	85.4	80.2	63.2	75.9	66.4	69.6	59.4	74	68	118	58	553	40°
45°	76.1	96.8	94.2	88.8	70.7	84.0	74.0	77.2	66.5	80	74	130	66	595	45°
50°	84.1	105	104	97.9	78.8	92.6	82.2	85.3	74.1	88	80	143	74	638	50°
55°	92.6	115	114	108	87.5	102	90.9	94.0	82.2	97	89	156	83	684	55°
60°	102	126	124	118	96.8	111	100	103	90.9	105	97	170	93	733	60°
65°	111	137	136	129	107	122	110	113	100	115	106	185	103	784	65°
70°	121	159	147	141	117	133	121	123	110	125	117	201	114	838	70°
75°	132	162	160	153	129	144	132	134	120	133	124	218	126	895	75°
80°	144	175	173	166	141	156	144	145	132	145	135	238	138	955	80°
85°	156	190	188	180	153	169	156	158	143	155	145	255	151	1018	85°
90°	168	205	202	194	167	183	170	170	156	167	157	275	166	*	90°
95°	182	220	218	209	181	197	184	184	169	180	171	296	181	*	95°
100°	196	237	235	226	196	212	198	198	183	193	182	318	197	*	100°
104°	208	251	249	239	209	225	211	210	195	203	192	336	210	*	104°
105°	211	254	252	242	212	228	214	213	198	210	200	341	214	*	105°
110°	226	273	270	260	229	245	231	229	213	218	207	365	232	*	110°
115°	243	292	290	279	247	262	248	246	230	235	225	391	251	*	115°
120°	260	312	310	299	266	281	266	263	247	251	240	418	271	*	120°
125°	278	333	331	319	286	300	286	281	265	267	255	447	293	*	125°
130°	297	356	354	341	307	320	306	301	284	282	275	477	315	*	130°
135°	317	379	377	363	329	341	327	321	304	305	292	508	339	*	135°
140°	337	404	402	387	352	364	350	342	326	319	307	541	364	*	140°
145°	359	430	428	412	377	387	373	364	348	333	315	576	390	*	145°
150°	382	456.8	455	438	403	411	398	387	387	*	*	613	417	*	150°



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* See page 8 for further detail on Bubble/Dew