

DEW POINT SCALE

DEGREES °F °C TO GRAINS PER POUND

DEWPOINT			DEWPOINT			DEWPOINT			DEWPOINT			DEWPOINT		
DEGREES °F	DEGREES °C	GRAINS/ POUND	DEGREES °F	DEGREES °C	GRAINS/ POUND	DEGREES °F	DEGREES °C	GRAINS/ POUND	DEGREES °F	DEGREES °C	GRAINS/ POUND	DEGREES °F	DEGREES °C	GRAINS/ POUND
120	48.89	570.4	72	22.22	118.8	24	- 4.44	18.24	- 24	-31.11	1.461	-72	- 57.78	.06383
119	48.33	552.8	71	21.67	114.7	23	- 5.00	17.40	- 25	- 31.67	1.375	- 73	- 58.33	.05934
118	47.78	535.6	70	21.11	110.7	22	- 5.56	16.58	- 26	- 32.22	1.289	- 74	- 58.89	.05486
117	47.22	519.0	69	20.56	107.0	21	- 6.11	15.81	- 27	- 32.78	1.222	- 75	- 59.44	.05037
116	46.67	503.0	68	20.00	103.2	20	- 6.67	15.06	- 28	- 33.33	1.154	- 76	- 60.00	.04721
115	46.11	487.3	67	19.44	99.68	19	- 7.22	14.36	- 29	- 33.89	1.090	- 77	- 60.56	.04404
114	45.55	472.2	66	18.89	96.18	18	- 7.78	13.67	- 30	- 34.44	1.025	- 78	- 61.11	.04086
113	45.00	457.5	65	18.33	92.82	17	- 8.33	13.03	- 31	- 35.00	.9668	- 79	- 61.67	.03769
112	44.44	443.3	64	17.78	89.60	16	- 8.89	12.40	- 32	- 35.56	.9086	- 80	- 62.22	.03451
111	43.89	429.4	63	17.22	86.45	15	- 9.44	11.81	- 33	- 36.11	.8564	- 81	- 62.77	.03228
110	43.33	416.1	62	16.67	83.37	14	- 10.00	11.24	- 34	- 36.67	.8043	- 82	- 63.33	.03006
109	42.78	403.1	61	16.11	80.43	13	- 10.56	10.70	- 35	- 37.22	.7578	- 83	- 63.89	.02784
108	42.22	390.5	60	15.56	77.56	12	- 11.11	10.18	- 36	- 37.78	.7112	- 84	- 64.44	.02562
107	41.66	378.3	59	15.00	74.83	11	- 11.67	9.681	- 37	- 38.33	.6699	- 85	- 65.00	.02340
106	41.11	366.4	58	14.44	72.10	10	- 12.22	9.205	- 38	- 38.89	.6286	- 86	- 65.56	.02186
105	40.56	354.9	57	13.89	69.54	9	- 12.78	8.751	- 39	- 39.44	.5917	- 87	- 66.11	.02033
104	40.00	343.8	56	13.33	67.02	8	- 13.33	8.323	- 40	- 40.00	.5548	- 88	- 66.67	.01877
103	39.44	332.9	55	12.78	64.60	7	- 13.89	7.91	- 41	- 40.56	.5219	- 89	- 67.22	.01723
102	38.89	322.4	54	12.22	62.26	6	- 14.44	7.518	- 42	- 41.11	.4890	- 90	- 67.78	.01569
101	38.33	312.2	53	11.67	59.98	5	- 15.00	7.140	- 43	- 41.67	.4597	- 91	- 68.33	.01463
100	37.78	302.3	52	11.11	57.79	4	- 15.56	6.784	- 44	- 42.22	.4304	- 92	- 68.89	.01358
99	37.22	292.7	51	10.56	55.66	3	- 16.11	6.443	- 45	- 42.78	.4043	- 93	- 69.44	.01253
98	36.67	283.4	50	10.00	53.61	2	- 16.67	6.117	- 46	- 43.33	.3784	- 94	- 70.00	.01147
97	36.11	274.4	49	9.44	51.62	1	- 17.22	5.806	- 47	- 44.89	.3554	- 95	- 70.56	.01042
96	35.55	265.6	48	8.89	49.70	0	- 17.78	5.510	- 48	- 44.44	.3323	- 96	- 71.11	.009704
95	35.00	257.1	47	8.33	47.84	- 1	- 18.33	5.228	- 49	- 45.00	.3118	- 97	- 71.67	.008988
94	34.44	248.9	46	7.78	46.05	- 2	- 18.89	4.960	- 50	- 45.56	.2914	- 98	- 72.22	.008272
93	33.89	240.9	45	7.22	44.32	- 3	- 19.44	4.704	- 51	- 46.11	.2749	- 99	- 72.78	.007556
92	33.33	233.1	44	6.67	42.64	- 4	- 20.00	4.460	- 52	- 46.67	.2583	- 100	- 73.33	.006840
91	32.78	225.6	43	6.11	41.02	- 5	- 20.56	4.228	- 53	- 47.22	.2418	- 101	- 73.89	.006360
90	32.22	218.3	42	5.55	39.47	- 6	- 21.11	4.007	- 54	- 47.78	.2253	- 102	- 74.44	.005879
89	31.67	211.2	41	5.00	37.95	- 7	- 21.67	3.796	- 55	- 48.33	.2088	- 103	- 75.00	.005399
88	31.11	204.3	40	4.44	36.49	- 8	- 22.22	3.596	- 56	- 48.89	.1967	- 104	- 75.56	.004918
87	30.55	197.7	39	3.89	35.08	- 9	- 22.78	3.406	- 57	- 49.44	.1846	- 105	- 76.11	.004438
86	30.00	191.2	38	3.33	33.73	- 10	- 23.33	3.224	- 58	- 50.00	.1725	- 106	- 76.67	.004119
85	29.44	184.9	37	2.78	32.42	- 11	- 23.89	3.051	- 59	- 50.56	.1604	- 107	- 77.22	.003800
84	28.89	178.8	36	2.22	31.15	- 12	- 24.44	2.888	- 60	- 51.11	.1483	- 108	- 77.78	.003482
83	28.33	173.0	35	1.67	29.93	- 13	- 25.00	2.732	- 61	- 51.67	.1395	- 109	- 78.33	.003163
82	27.78	167.2	34	1.11	28.75	- 14	- 25.55	2.584	- 62	- 52.22	.1307	- 110	- 78.89	.002844
81	27.22	161.7	33	0.56	27.61	- 15	- 26.17	2.444	- 63	- 52.78	.1220	- 111	- 79.44	.002635
80	26.67	156.3	32	0.00	26.52	- 16	- 26.67	2.311	- 64	- 53.33	.1132	- 112	- 80.00	.002426
79	26.11	151.1	31	- 0.56	25.32	- 17	- 27.22	2.184	- 65	- 53.89	.1044	- 113	- 80.56	.002218
78	25.55	146.0	30	- 1.11	24.19	- 18	- 27.78	2.064	- 66	- 54.44	.09808	- 114	- 81.11	.002009
77	25.00	141.1	29	- 1.67	23.08	- 19	- 28.33	1.950	- 67	- 55.00	.09176	- 115	- 81.67	.001800
76	24.44	136.4	28	- 2.22	22.03	- 20	- 28.89	1.841	- 68	- 55.56	.08544	- 116	- 82.22	.001665
75	23.89	131.7	27	- 2.78	21.02	- 21	- 29.44	1.741	- 69	- 56.11	.07912	- 117	- 82.78	.001530
74	23.33	127.3	26	- 3.33	20.06	- 22	- 30.00	1.641	- 70	- 56.67	.07280	- 118	- 83.33	.001394
73	22.78	123.0	25	- 3.89	19.13	- 23	- 30.56	1.551	- 71	- 57.22	.06831	- 119	- 83.89	.001259

FORMULAS AND CONVERSION FACTORS

MOISTURE REMOVAL OR LATENT WORK

1050 BTU/H = 1 LB/HR

WATER VAPOR

7000 GRAINS = 1 LB OF WATER

WORK TO WATT

3.414 BTU/H = 1 WATT

GAS

1 THERM = 100,000 BTU/H

TONS

12,000 BTU'S = 1 TON

SENSIBLE COOLING

1.08 X (SCFM) (TEMP 1 – TEMP 2) = BTU/H

LATENT COOLING

[4.5 X (SCFM) X (GRAINS/LB 1 – GRAINS/LB 2)] / 7000 = LB/HR

[4.5 X (SCFM) X (GRAINS/LB 1 – GRAINS/LB 2) X 1050] / 7000 = BTU/H

TOTAL COOLING

4.5 X (SCFM) X (ENTHALPY 1 – ENTHALPY 2) = BTU/H

COEFFICIENT OF PERFORMANCE (COP)

WORK DONE (BTUH) / ENERGY REQUIRED (BTUH)

BLENDING AIR STREAMS

[(CFM 1 X TEMP 1) + (CFM 2 X TEMP 2)] / (CFM 1 + CFM 2)

