

LAMPIRAN

Lampiran 1– Tabel Properti Saturated R-407C

Table 1. Freon™ 407C Saturation Properties—Temperature Table

Temp [°C]	Pressure [kPa]		Volume [m³/kg]		Density [kg/m³]		Enthalpy [kJ/kg]			Entropy [kJ/(kg·K)]		Temp [°C]
	Liquid p_s	Vapor p_s	Liquid v_f	Vapor v_g	Liquid $1/v_f$	Vapor $1/v_g$	Liquid h_f	Latent h_{fg}	Vapor h_g	Liquid s_f	Vapor s_g	
-100	2.5	1.2	0.0006	14.1643	1583.8	0.071	75.8	275.4	351.3	0.4409	2.0690	-100
-99	2.7	1.3	0.0006	12.8666	1580.4	0.078	76.9	274.9	351.9	0.4473	2.0629	-99
-98	3.0	1.4	0.0006	11.7371	1577.1	0.085	78.1	274.4	352.5	0.4537	2.0568	-98
-97	3.2	1.6	0.0006	10.7066	1573.7	0.093	79.2	273.9	353.1	0.4601	2.0509	-97
-96	3.5	1.7	0.0006	9.7752	1570.4	0.102	80.3	273.4	353.7	0.4664	2.0451	-96
-95	3.8	1.9	0.0006	8.9445	1567.1	0.112	81.4	272.9	354.3	0.4727	2.0394	-95
-94	4.2	2.1	0.0006	8.1833	1563.7	0.122	82.6	272.4	355.0	0.4790	2.0339	-94
-93	4.5	2.3	0.0006	7.5019	1560.4	0.133	83.7	271.9	355.6	0.4853	2.0284	-93
-92	4.9	2.5	0.0006	6.8823	1557.0	0.145	84.8	271.4	356.2	0.4915	2.0230	-92
-91	5.4	2.8	0.0006	6.3251	1553.7	0.158	85.9	270.9	356.8	0.4977	2.0178	-91
-90	5.8	3.0	0.0006	5.8173	1550.3	0.172	87.1	270.4	357.4	0.5039	2.0126	-90
-89	6.3	3.3	0.0006	5.3533	1546.9	0.187	88.2	269.9	358.1	0.5101	2.0075	-89
-88	6.8	3.6	0.0006	4.9358	1543.6	0.203	89.3	269.4	358.7	0.5162	2.0026	-88
-87	7.3	3.9	0.0006	4.5537	1540.2	0.220	90.5	268.8	359.3	0.5224	1.9977	-87
-86	7.9	4.3	0.0007	4.2052	1536.9	0.238	91.6	268.3	359.9	0.5285	1.9929	-86
-85	8.5	4.7	0.0007	3.8880	1533.5	0.257	92.8	267.8	360.6	0.5346	1.9882	-85
-84	9.2	5.1	0.0007	3.5984	1530.1	0.278	93.9	267.3	361.2	0.5406	1.9836	-84
-83	9.9	5.5	0.0007	3.3344	1526.8	0.300	95.0	266.8	361.8	0.5467	1.9791	-83
-82	10.6	5.9	0.0007	3.0921	1523.4	0.323	96.2	266.3	362.5	0.5527	1.9747	-82
-81	11.4	6.4	0.0007	2.8703	1520.0	0.348	97.3	265.8	363.1	0.5587	1.9703	-81
-80	12.3	7.0	0.0007	2.6667	1516.6	0.375	98.5	265.2	363.7	0.5646	1.9661	-80
-79	13.2	7.5	0.0007	2.4795	1513.2	0.403	99.6	264.7	364.4	0.5706	1.9619	-79
-78	14.1	8.1	0.0007	2.3079	1509.9	0.433	100.8	264.2	365.0	0.5765	1.9578	-78
-77	15.1	8.8	0.0007	2.1501	1506.5	0.465	102.0	263.7	365.6	0.5824	1.9538	-77
-76	16.2	9.4	0.0007	2.0048	1503.1	0.499	103.1	263.2	366.3	0.5883	1.9498	-76
-75	17.3	10.2	0.0007	1.8709	1499.7	0.535	104.3	262.6	366.9	0.5942	1.9460	-75
-74	18.5	10.9	0.0007	1.7473	1496.3	0.572	105.4	262.1	367.6	0.6001	1.9422	-74
-73	19.7	11.8	0.0007	1.6335	1492.9	0.612	106.6	261.6	368.2	0.6059	1.9385	-73
-72	21.0	12.6	0.0007	1.5281	1489.5	0.654	107.8	261.1	368.8	0.6117	1.9348	-72
-71	22.4	13.5	0.0007	1.4306	1486.1	0.699	109.0	260.5	369.5	0.6175	1.9313	-71
-70	23.9	14.5	0.0007	1.3405	1482.7	0.746	110.1	260.0	370.1	0.6233	1.9277	-70
-69	25.4	15.6	0.0007	1.2571	1479.3	0.796	111.3	259.5	370.8	0.6291	1.9243	-69
-68	27.0	16.7	0.0007	1.1797	1475.9	0.848	112.5	258.9	371.4	0.6349	1.9209	-68
-67	28.7	17.8	0.0007	1.1078	1472.5	0.903	113.7	258.4	372.1	0.6406	1.9176	-67
-66	30.5	19.0	0.0007	1.0411	1469.0	0.961	114.9	257.9	372.7	0.6463	1.9144	-66
-65	32.4	20.3	0.0007	0.9791	1465.6	1.021	116.0	257.3	373.3	0.6520	1.9112	-65
-64	34.4	21.7	0.0007	0.9215	1462.2	1.085	117.2	256.8	374.0	0.6577	1.9081	-64
-63	36.4	23.1	0.0007	0.8678	1458.8	1.152	118.4	256.2	374.6	0.6634	1.9050	-63
-62	38.6	24.7	0.0007	0.8179	1455.3	1.223	119.6	255.7	375.3	0.6691	1.9020	-62
-61	40.9	26.3	0.0007	0.7713	1451.9	1.297	120.8	255.1	375.9	0.6747	1.8991	-61
-60	43.3	27.9	0.0007	0.7279	1448.5	1.374	122.0	254.6	376.6	0.6803	1.8962	-60
-59	45.7	29.7	0.0007	0.6873	1445.0	1.455	123.2	254.0	377.2	0.6859	1.8933	-59
-58	48.4	31.6	0.0007	0.6494	1441.6	1.540	124.4	253.5	377.9	0.6916	1.8906	-58
-57	51.1	33.5	0.0007	0.6140	1438.1	1.629	125.6	252.9	378.5	0.6971	1.8878	-57
-56	53.9	35.6	0.0007	0.5809	1434.7	1.722	126.8	252.3	379.2	0.7027	1.8852	-56
-55	56.9	37.7	0.0007	0.5499	1431.2	1.819	128.0	251.8	379.8	0.7083	1.8825	-55
-54	60.0	40.0	0.0007	0.5208	1427.8	1.920	129.3	251.2	380.5	0.7138	1.8800	-54
-53	63.3	42.4	0.0007	0.4936	1424.3	2.026	130.5	250.6	381.1	0.7194	1.8775	-53
-52	66.6	44.9	0.0007	0.4681	1420.8	2.137	131.7	250.1	381.8	0.7249	1.8750	-52
-51	70.2	47.5	0.0007	0.4441	1417.4	2.252	132.9	249.5	382.4	0.7304	1.8726	-51
-50	73.8	50.2	0.0007	0.4216	1413.9	2.372	134.2	248.9	383.1	0.7359	1.8702	-50
-49	77.7	53.0	0.0007	0.4004	1410.4	2.497	135.4	248.3	383.7	0.7414	1.8678	-49
-48	81.6	56.0	0.0007	0.3805	1406.9	2.628	136.6	247.7	384.4	0.7469	1.8655	-48
-47	85.8	59.1	0.0007	0.3618	1403.5	2.764	137.9	247.1	385.0	0.7523	1.8633	-47
-46	90.1	62.4	0.0007	0.3442	1400.0	2.905	139.1	246.6	385.6	0.7578	1.8611	-46
-45	94.6	65.8	0.0007	0.3276	1396.5	3.053	140.3	246.0	386.3	0.7632	1.8589	-45
-44	99.2	69.3	0.0007	0.3120	1393.0	3.206	141.6	245.4	386.9	0.7687	1.8568	-44
-43	104.0	73.0	0.0007	0.2972	1389.5	3.365	142.8	244.7	387.6	0.7741	1.8547	-43
-42	109.1	76.8	0.0007	0.2833	1386.0	3.530	144.1	244.1	388.2	0.7795	1.8527	-42
-41	114.3	80.8	0.0007	0.2701	1382.4	3.702	145.3	243.5	388.9	0.7849	1.8507	-41

Temp [°C]	Pressure [kPa]		Volume [m³/kg]		Density [kg/m³]		Enthalpy [kJ/kg]			Entropy [kJ/(kg·K)]		Temp [°C]
	Liquid p_s	Vapor p_s	Liquid v_f	Vapor v_g	Liquid $1/v_f$	Vapor $1/v_g$	Liquid h_f	Latent h_{fg}	Vapor h_g	Liquid s_f	Vapor s_g	
-40	119.7	85.0	0.0007	0.2577	1378.9	3.880	146.6	242.9	389.5	0.7903	1.8467	-40
-39	125.3	89.3	0.0007	0.2460	1375.4	4.065	147.9	242.3	390.2	0.7957	1.8468	-39
-38	131.1	93.8	0.0007	0.2349	1371.9	4.257	149.1	241.7	390.8	0.8011	1.8449	-38
-37	137.1	98.5	0.0007	0.2244	1368.3	4.456	150.4	241.0	391.4	0.8064	1.8430	-37
-36	143.3	103.4	0.0007	0.2145	1364.8	4.662	151.7	240.4	392.1	0.8118	1.8412	-36
-35	149.8	108.5	0.0007	0.2051	1361.3	4.876	153.2	239.5	392.7	0.8184	1.8394	-35
-34	156.4	113.8	0.0007	0.1962	1357.7	5.098	154.5	238.8	393.4	0.8237	1.8377	-34
-33	163.3	119.2	0.0007	0.1877	1354.2	5.327	155.8	238.2	394.0	0.8290	1.8360	-33
-32	170.5	124.9	0.0007	0.1797	1350.6	5.564	157.1	237.6	394.6	0.8343	1.8343	-32
-31	177.8	130.8	0.0007	0.1721	1347.1	5.810	158.3	236.9	395.3	0.8396	1.8326	-31
-30	185.5	136.9	0.0007	0.1649	1343.5	6.064	159.6	236.3	395.9	0.8448	1.8310	-30
-29	193.3	143.2	0.0007	0.1580	1339.9	6.327	160.9	235.6	396.5	0.8501	1.8294	-29
-28	201.5	149.8	0.0007	0.1515	1336.3	6.599	162.2	234.9	397.2	0.8554	1.8278	-28
-27	209.9	156.5	0.0008	0.1453	1332.7	6.880	163.3	234.5	397.8	0.8596	1.8263	-27
-26	218.6	163.6	0.0008	0.1394	1329.2	7.171	164.4	234.0	398.4	0.8643	1.8248	-26
-25	227.6	170.9	0.0008	0.1338	1325.6	7.472	165.7	233.3	399.0	0.8696	1.8233	-25
-24	236.8	178.4	0.0008	0.1285	1322.0	7.782	167.1	232.6	399.7	0.8748	1.8218	-24
-23	246.3	186.2	0.0008	0.1234	1318.3	8.102	168.4	231.9	400.3	0.8801	1.8204	-23
-22	256.2	194.2	0.0008	0.1186	1314.7	8.433	169.7	231.2	400.9	0.8854	1.8189	-22
-21	266.3	202.6	0.0008	0.1140	1311.1	8.775	171.0	230.5	401.5	0.8907	1.8176	-21
-20	276.8	211.2	0.0008	0.1096	1307.5	9.127	172.4	229.7	402.1	0.8959	1.8162	-20
-19	287.5	220.1	0.0008	0.1054	1303.8	9.491	173.7	229.0	402.7	0.9012	1.8148	-19
-18	298.6	229.2	0.0008	0.1014	1300.2	9.866	175.1	228.3	403.4	0.9064	1.8135	-18
-17	310.0	238.7	0.0008	0.0975	1296.5	10.253	176.4	227.5	404.0	0.9117	1.8122	-17
-16	321.8	248.5	0.0008	0.0939	1292.9	10.651	177.8	226.8	404.6	0.9169	1.8109	-16
-15	333.8	258.6	0.0008	0.0904	1289.2	11.062	179.1	226.0	405.2	0.9221	1.8097	-15
-14	346.3	269.0	0.0008	0.0871	1285.5	11.486	180.5	225.3	405.8	0.9274	1.8084	-14
-13	359.0	279.7	0.0008	0.0839	1281.9	11.923	181.9	224.5	406.4	0.9326	1.8072	-13
-12	372.2	290.8	0.0008	0.0808	1278.2	12.372	183.2	223.7	407.0	0.9378	1.8060	-12
-11	385.7	302.2	0.0008	0.0779	1274.5	12.835	184.5	223.1	407.6	0.9425	1.8048	-11
-10	399.6	313.9	0.0008	0.0751	1270.8	13.313	185.9	222.3	408.2	0.9478	1.8037	-10
-9	413.8	326.0	0.0008	0.0724	1267.1	13.804	187.3	221.5	408.8	0.9530	1.8025	-9
-8	428.5	338.5	0.0008	0.0699	1263.3	14.311	188.7	220.7	409.3	0.9582	1.8014	-8
-7	443.5	351.3	0.0008	0.0674	1259.6	14.831	190.1	219.9	409.9	0.9635	1.8003	-7
-6	458.9	364.5	0.0008	0.0651	1255.9	15.368	191.5	219.0	410.5	0.9687	1.7992	-6
-5	474.8	378.1	0.0008	0.0628	1252.1	15.919	192.9	218.2	411.1	0.9738	1.7981	-5
-4	491.0	392.1	0.0008	0.0607	1248.4	16.487	194.3	217.4	411.7	0.9791	1.7970	-4
-3	507.7	406.5	0.0008	0.0586	1244.6	17.071	195.7	216.5	412.2	0.9843	1.7959	-3
-2	524.8	421.2	0.0008	0.0566	1240.8	17.671	197.1	215.7	412.8	0.9896	1.7949	-2
-1	542.3	436.4	0.0008	0.0547	1237.0	18.289	198.6	214.8	413.4	0.9948	1.7938	-1
0	560.3	452.0	0.0008	0.0528	1233.2	18.924	200.0	213.9	413.9	1.0000	1.7928	0
1	578.7	468.0	0.0008	0.0511	1229.4	19.577	201.4	213.0	414.5	1.0052	1.7918	1
2	597.6	484.5	0.0008	0.0494	1225.6	20.249	202.9	212.1	415.0	1.0104	1.7908	2
3	616.9	501.4	0.0008	0.0478	1221.8	20.939	204.3	211.2	415.6	1.0156	1.7898	3
4	636.7	518.7	0.0008	0.0462	1217.9	21.649	205.8	210.3	416.1	1.0209	1.7888	4
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5	657.0	536.6	0.0008	0.0447	1214.1	22.378	207.3	209.4	416.6	1.0261	1.7879	5
6	677.8	554.8	0.0008	0.0432	1210.2	23.127	208.7	208.4	417.2	1.0313	1.7869	6
7	699.0	573.6	0.0008	0.0418	1206.3	23.898	210.2	207.5	417.7	1.0365	1.7859	7
8	720.6	592.8	0.0008	0.0405	1202.4	24.689	211.7	206.5	418.2	1.0418	1.7850	8
9	743.0	612.5	0.0008	0.0392	1198.5	25.502	213.2	205.6	418.8	1.0470	1.7841	9
10	765.8	632.8	0.0008	0.0380	1194.6	26.338	214.7	204.6	419.3	1.0522	1.7831	10
11	789.1	653.5	0.0008	0.0368	1190.7	27.196	216.2	203.6	419.8	1.0574	1.7822	11
12	812.9	674.7	0.0008	0.0356	1186.8	28.078	217.7	202.6	420.3	1.0627	1.7813	12
13	837.3	696.5	0.0008	0.0345	1182.8	28.984	219.2	201.6	420.8	1.0679	1.7804	13
14	862.2	718.8	0.0008	0.0334	1178.8	29.914	220.8	200.5	421.3	1.0732	1.7794	14
15	887.6	741.7	0.0009	0.0324	1174.8	30.870	222.3	199.5	421.8	1.0784	1.7785	15
16	913.6	765.1	0.0009	0.0314	1170.8	31.852	223.8	198.4	422.3	1.0837	1.7776	16
17	940.2	789.1	0.0009	0.0304	1166.8	32.860	225.4	197.4	422.7	1.0889	1.7767	17
18	967.3	813.6	0.0009	0.0295	1162.8	33.896	226.9	196.3	423.2	1.0942	1.7758	18
19	995.1	838.7	0.0009	0.0286	1158.7	34.960	228.5	195.2	423.7	1.0995	1.7749	19

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	Liquid p_f	Vapor p_g	Liquid v_f	Vapor v_g	Liquid $1/v_f$	Vapor $1/v_g$	Liquid h_f	Latent h_{fg}	Vapor h_g	Liquid s_f	Vapor s_g	
20	1023.4	864.4	0.0009	0.0277	1154.7	36.052	230.1	194.1	424.1	1.1047	1.7740	20
21	1052.3	890.7	0.0009	0.0269	1150.6	37.175	231.6	193.0	424.6	1.1100	1.7731	21
22	1081.8	917.6	0.0009	0.0261	1146.5	38.328	233.2	191.8	425.1	1.1153	1.7722	22
23	1112.0	945.1	0.0009	0.0253	1142.3	39.512	234.8	190.7	425.5	1.1206	1.7713	23
24	1142.7	973.3	0.0009	0.0246	1138.2	40.728	236.4	189.5	425.9	1.1259	1.7704	24
25	1174.1	1002.1	0.0009	0.0238	1134.0	41.977	238.0	188.3	426.4	1.1312	1.7695	25
26	1206.1	1031.5	0.0009	0.0231	1129.9	43.261	239.7	187.1	426.8	1.1366	1.7686	26
27	1238.8	1061.6	0.0009	0.0224	1125.6	44.579	241.3	185.9	427.2	1.1419	1.7677	27
28	1272.1	1092.3	0.0009	0.0218	1121.4	45.934	242.9	184.7	427.6	1.1473	1.7668	28
29	1306.0	1123.7	0.0009	0.0211	1117.2	47.325	244.6	183.4	428.0	1.1526	1.7659	29
30	1340.7	1155.9	0.0009	0.0205	1112.9	48.755	246.2	182.1	428.4	1.1580	1.7649	30
31	1376.0	1188.7	0.0009	0.0199	1108.6	50.225	247.9	180.8	428.7	1.1634	1.7640	31
32	1412.0	1222.2	0.0009	0.0193	1104.3	51.735	249.6	179.5	429.1	1.1688	1.7630	32
33	1448.7	1256.4	0.0009	0.0188	1099.9	53.287	251.3	178.2	429.5	1.1742	1.7621	33
34	1486.1	1291.4	0.0009	0.0182	1095.5	54.883	253.0	176.9	429.8	1.1796	1.7611	34
35	1524.2	1327.1	0.0009	0.0177	1091.1	56.523	254.7	175.5	430.2	1.1850	1.7602	35
36	1563.0	1363.5	0.0009	0.0172	1086.7	58.209	256.4	174.1	430.5	1.1905	1.7592	36
37	1602.5	1400.7	0.0009	0.0167	1082.2	59.943	258.1	172.7	430.8	1.1959	1.7582	37
38	1642.8	1438.7	0.0009	0.0162	1077.7	61.726	259.9	171.3	431.1	1.2014	1.7572	38
39	1683.8	1477.5	0.0009	0.0157	1073.2	63.561	261.6	169.8	431.4	1.2068	1.7562	39
40	1725.5	1517.0	0.0009	0.0153	1068.6	65.448	263.4	168.3	431.7	1.2125	1.7551	40
41	1768.0	1557.4	0.0009	0.0148	1064.0	67.390	265.2	166.8	432.0	1.2180	1.7541	41
42	1811.3	1598.6	0.0009	0.0144	1059.4	69.388	267.0	165.3	432.3	1.2236	1.7530	42
43	1855.3	1640.6	0.0009	0.0140	1054.7	71.446	268.8	163.7	432.5	1.2292	1.7519	43
44	1900.2	1683.5	0.0010	0.0136	1050.0	73.565	270.6	162.2	432.8	1.2348	1.7508	44
45	1945.8	1727.2	0.0010	0.0132	1045.2	75.747	272.5	160.5	433.0	1.2404	1.7497	45
46	1992.2	1771.7	0.0010	0.0128	1040.4	77.994	274.3	158.9	433.2	1.2461	1.7485	46
47	2039.4	1817.2	0.0010	0.0125	1035.5	80.311	276.2	157.2	433.4	1.2517	1.7474	47
48	2087.4	1863.5	0.0010	0.0121	1030.6	82.699	278.1	155.5	433.6	1.2575	1.7462	48
49	2136.2	1910.8	0.0010	0.0117	1025.7	85.161	280.0	153.8	433.8	1.2632	1.7449	49
50	2185.9	1959.0	0.0010	0.0114	1020.7	87.701	281.9	152.0	433.9	1.2690	1.7437	50
51	2236.4	2008.1	0.0010	0.0111	1015.6	90.321	283.8	150.2	434.1	1.2748	1.7424	51
52	2287.7	2058.1	0.0010	0.0107	1010.5	93.027	285.8	148.4	434.2	1.2806	1.7411	52
53	2339.9	2109.1	0.0010	0.0104	1005.3	95.820	287.7	146.5	434.3	1.2865	1.7397	53
54	2392.9	2161.1	0.0010	0.0101	1000.0	98.707	289.7	144.6	434.4	1.2924	1.7384	54
55	2446.8	2214.1	0.0010	0.0098	994.7	101.691	291.7	142.7	434.4	1.2984	1.7369	55
56	2501.6	2268.1	0.0010	0.0095	989.3	104.777	293.8	140.7	434.5	1.3044	1.7355	56
57	2557.3	2323.1	0.0010	0.0093	983.8	107.970	295.8	138.6	434.5	1.3105	1.7340	57
58	2613.8	2379.1	0.0010	0.0090	978.2	111.277	297.9	136.6	434.5	1.3166	1.7324	58
59	2671.2	2436.2	0.0010	0.0087	972.6	114.703	300.0	134.4	434.4	1.3227	1.7308	59
60	2729.5	2494.4	0.0010	0.0085	966.8	118.255	302.2	132.2	434.4	1.3289	1.7291	60
61	2788.7	2553.6	0.0010	0.0082	961.0	121.941	304.3	130.0	434.3	1.3352	1.7274	61
62	2848.8	2614.0	0.0010	0.0080	955.0	125.766	306.5	127.7	434.2	1.3415	1.7256	62
63	2909.9	2675.4	0.0011	0.0077	948.9	129.746	308.7	125.3	434.1	1.3479	1.7238	63
64	2971.8	2738.0	0.0011	0.0075	942.7	133.884	311.0	122.9	433.9	1.3544	1.7219	64
65	3034.7	2801.8	0.0011	0.0072	936.3	138.194	313.3	120.4	433.7	1.3609	1.7199	65
66	3098.5	2866.8	0.0011	0.0070	929.8	142.687	315.6	117.9	433.5	1.3675	1.7178	66
67	3163.2	2932.9	0.0011	0.0068	923.2	147.378	318.0	115.2	433.2	1.3743	1.7157	67
68	3228.8	3000.3	0.0011	0.0066	916.3	152.262	320.4	112.5	432.9	1.3811	1.7134	68
69	3295.4	3068.9	0.0011	0.0064	909.3	157.416	322.8	109.7	432.5	1.3880	1.7111	69
70	3362.9	3138.8	0.0011	0.0061	902.0	162.800	325.3	106.8	432.1	1.3950	1.7088	70
71	3431.3	3210.1	0.0011	0.0059	894.5	168.458	327.9	103.8	431.6	1.4022	1.7060	71
72	3500.6	3282.6	0.0011	0.0057	886.7	174.415	330.5	100.6	431.1	1.4095	1.7033	72
73	3570.8	3356.5	0.0011	0.0055	878.6	180.703	333.1	97.4	430.5	1.4169	1.7004	73
74	3642.0	3431.8	0.0011	0.0053	870.1	187.358	335.9	94.0	429.9	1.4246	1.6973	74
75	3714.0	3508.6	0.0012	0.0051	861.3	194.425	338.7	90.4	429.2	1.4324	1.6941	75
76	3786.9	3586.9	0.0012	0.0050	852.0	201.958	341.6	86.7	428.3	1.4404	1.6906	76
77	3860.6	3666.7	0.0012	0.0048	842.1	210.021	344.6	82.8	427.4	1.4487	1.6869	77
78	3935.2	3748.1	0.0012	0.0046	831.6	218.698	347.6	78.6	426.4	1.4573	1.6829	78
79	4010.5	3831.1	0.0012	0.0044	820.3	228.096	351.0	74.2	425.2	1.4663	1.6785	79

Lampiran 2 – Tabel Properti Superheat R-407C

Table 2. Freon™ 407C Superheated Vapor—Constant Pressure Table (continued)

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg·K) Saturation Properties in Light Blue

Absolute Pressure [kPa]													
Temp [°C]	2600.0			2800.0			3000.0			3200.0			Temp [°C]
	61.80 °C			65.00 °C			68.00 °C			70.90 °C			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0080	434.2	1.7261	0.0072	433.7	1.7200	0.0066	432.9	1.7134	0.0060	431.7	1.7064	
65	0.0083	438.6	1.7390	0.0073	433.8	1.7201							65
70	0.0087	445.0	1.7578	0.0077	440.8	1.7409	0.0068	436.0	1.7228				70
75	0.0091	451.2	1.7758	0.0081	447.5	1.7601	0.0072	443.3	1.7438	0.0064	438.6	1.7262	75
80	0.0095	457.2	1.7930	0.0085	453.8	1.7782	0.0076	450.1	1.7632	0.0068	446.1	1.7476	80
85	0.0099	463.1	1.8096	0.0089	460.0	1.7956	0.0080	456.7	1.7816	0.0072	453.0	1.7672	85
90	0.0102	469.0	1.8257	0.0092	466.0	1.8124	0.0083	463.0	1.7991	0.0075	459.7	1.7857	90
95	0.0106	474.7	1.8414	0.0095	472.0	1.8286	0.0087	469.1	1.8159	0.0079	466.1	1.8033	95
100	0.0109	480.4	1.8568	0.0099	477.8	1.8444	0.0090	475.2	1.8322	0.0082	472.4	1.8202	100
105	0.0112	486.1	1.8719	0.0102	483.6	1.8598	0.0093	481.1	1.8481	0.0085	478.5	1.8365	105
110	0.0115	491.7	1.8867	0.0104	489.4	1.8750	0.0095	487.0	1.8636	0.0088	484.6	1.8524	110
115	0.0118	497.3	1.9012	0.0107	495.1	1.8898	0.0098	492.9	1.8787	0.0090	490.6	1.8679	115
120	0.0121	502.9	1.9156	0.0110	500.8	1.9044	0.0101	498.7	1.8936	0.0093	496.5	1.8831	120
125	0.0123	508.5	1.9297	0.0113	506.5	1.9188	0.0104	504.5	1.9082	0.0095	502.4	1.8980	125
130	0.0126	514.1	1.9437	0.0115	512.2	1.9329	0.0106	510.2	1.9226	0.0098	508.2	1.9126	130
135	0.0129	519.7	1.9574	0.0118	517.8	1.9469	0.0109	516.0	1.9368	0.0100	514.1	1.9270	135
140	0.0132	525.3	1.9711	0.0121	523.5	1.9607	0.0111	521.7	1.9507	0.0103	519.9	1.9411	140
145	0.0134	530.9	1.9845	0.0123	529.2	1.9743	0.0114	527.4	1.9645	0.0105	525.7	1.9551	145
150	0.0137	536.5	1.9979	0.0126	534.8	1.9878	0.0116	533.2	1.9781	0.0107	531.5	1.9689	150
155	0.0139	542.1	2.0111	0.0128	540.5	2.0011	0.0118	538.9	1.9916	0.0110	537.3	1.9825	155
160	0.0142	547.7	2.0242	0.0130	546.2	2.0143	0.0121	544.6	2.0049	0.0112	543.1	1.9960	160
165	0.0144	553.4	2.0371	0.0133	551.9	2.0274	0.0123	550.4	2.0181	0.0114	548.9	2.0093	165
170	0.0147	559.0	2.0500	0.0135	557.6	2.0403	0.0125	556.1	2.0312	0.0116	554.7	2.0224	170
175	0.0149	564.7	2.0627	0.0138	563.3	2.0532	0.0127	561.9	2.0441	0.0118	560.5	2.0355	175
180	0.0152	570.4	2.0753	0.0140	569.1	2.0659	0.0129	567.7	2.0569	0.0120	566.3	2.0484	180
185	0.0154	576.1	2.0878	0.0142	574.8	2.0785	0.0132	573.5	2.0686	0.0122	572.1	2.0612	185
190	0.0157	581.8	2.1003	0.0144	580.6	2.0910	0.0134	579.3	2.0822	0.0125	578.0	2.0738	190
195	0.0159	587.6	2.1126	0.0147	586.3	2.1034	0.0136	585.1	2.0947	0.0127	583.8	2.0864	195
200	0.0161	593.3	2.1248	0.0149	592.1	2.1157	0.0138	590.9	2.1071	0.0129	589.7	2.0989	200
205	0.0164	599.1	2.1370	0.0151	597.9	2.1279	0.0140	596.8	2.1194	0.0131	595.6	2.1112	205
210	0.0166	604.9	2.1491	0.0153	603.8	2.1401	0.0142	602.6	2.1316	0.0133	601.5	2.1235	210
215	0.0168	610.7	2.1610	0.0155	609.6	2.1521	0.0144	608.5	2.1437	0.0135	607.4	2.1357	215
220							0.0146	614.4	2.1557	0.0136	613.3	2.1477	220
225										0.0138	619.2	2.1597	225

Lampiran 3 – Data Properti R-407C Suhu 10 °C

R407C Thermodynamic & Transport Properties (Based on Venus model)

Name:

Category:

Pure/Mixture:

Short Name:

Full Name:

Molecular Weight:

Critical Temperature:

Critical Pressure:

Critical Density:

Mixture Component:

R407C : Introduction

Single Value **Table**

☒ Temperature= Acceptable Range : < T <

☐ Pressure=

☐ Density=

☐ Specific Enthalpy=

☐ Specific Entropy= 52%

☐ Internal Energy=

R407C: Thermodynamic & Transport Properties Calculated Result

[Calculation results]

State: **Saturated Liquid** **Saturated Vapor**

Molecular Weight=

Temperature=

Pressure=

Density=

Specific Volume=

Specific Enthalpy=

Specific Entropy=

Internal Energy=

Composition=

Saturated Vapor Pressure, Boiling Point(dew point), Latent Heat of Vaporization are saturated properties, just enter One parameter to calculate them!

Saturated Vapor Pressure=

Boiling Point (Dew Point)=

Vaporization Latent Heat=

Specific Heat(Cp)=

Specific Heat(Cv)=

Cp/Cv=

Vapor Quality=

Compressibility Factor=

Helmholtz Energy=

Gibbs Free Energy=

Fugacity=

Fugacity Coefficient=

Joule-Thomson Coefficient=

Speed of Sound=

2nd Virial Coefficient=

3rd Virial Coefficient=

Thermal Conductivity=

Thermal Diffusivity=

Kinematic Viscosity=

Dynamic Viscosity=

Surface Tension=

Prandtl Number=

Relative Dielectric Constant=

Lampiran 4 – Data Properti R-407C Suhu 77,12 °C

R407C: Thermodynamic & Transport Properties (Based on Venus model)

Name:

Category:

Pure/Mixture:

Short Name:

Full Name:

Molecular Weight: g/mol

Critical Temperature: °C

Critical Pressure: MPa(absol)

Critical Density: kg/m³

Mixture Component:

R407C : Introduction

Single Value **Table**

☒ Temperature= °C Acceptable Range : < T <

☐ Pressure= MPa(absol) < P <

☐ Density= kg/m³ Composition: Mole Percent :

☐ Specific Enthalpy= kJ/kg Mass Percent : R32 - 23% , R125 - 25% , R134A

☐ Specific Entropy= kJ/(kg·K) 52%

☐ Internal Energy= kJ/kg

Calculate Reference

R407C: Thermodynamic & Transport Properties Calculated Result

[Calculation result]

State:

Molecular Weight=	86.2036	83.9004	g/mol
Temperature=	77.12	77.12	°C
Pressure=	3.9455	3.9455	MPa(absol)
Density=	794.5285	237.4687	kg/m ³
Specific Volume=	1.25861e-3	4.21108e-3	m ³ /kg
Specific Enthalpy=	332.6371	416.3505	kJ/kg
Specific Entropy=	1.5108	1.7549	kJ/(kg·K)
Internal Energy=	327.6712	399.7355	kJ/kg
Composition=	R32: 0.3811, R125: 0.1796, R134A: 0.4393	R32: 0.4318, R125: 0.1925, R134A: 0.3757	

Saturated Vapor Pressure, Boiling Point(dew point), Latent Heat of Vaporization are saturated properties, just enter One parameter to calculate them!

Saturated Vapor Pressure=	3.9455		MPa(absol)
Boiling Point (Dew Point)=	77.12	77.12	°C
Vaporization Latent Heat=	83.7134	83.7134	kJ/kg
Specific Heat(Cp)=	3.4567	4.0558	kJ/(kg·K)
Specific Heat(Cv)=	1.0677	1.1303	kJ/(kg·°C)
Cp/Cv=	3.2374	3.5881	
Vapor Quality=	Not defined	Not defined	
Compressibility Factor=	0.147	0.4787	
Helmholtz Energy=	-201.5074	-214.9568	kJ/kg
Gibbs Free Energy=	-196.5415	-198.3418	kJ/kg
Fugacity=	1.3149	1.3149	MPa
Fugacity Coefficient=	0.3333	0.3333	
Joule-Thomson Coefficient=	3.16137e-3	0.0153	K/kPa
Speed of Sound=	169.9869	121.5431	m/s
2nd Virial Coefficient=	-2.94276e-3	-2.93636e-3	m ³ /kg
3rd Virial Coefficient=	3.22513e-6	3.31868e-6	(m ³ /kg) ²
Thermal Conductivity=	0.0603	0.0349	W/(m·K)
Thermal Diffusivity=	2.19598e-8	3.62430e-8	m ² /s
Kinematic Viscosity=	8.27710e-8	7.98372e-8	m ² /s
Dynamic Viscosity=	6.57639e-5	1.89588e-5	Pa·s
Surface Tension=	6.37357e-4	Not defined	N/m
Prandtl Number=	3.7692	2.2028	
Relative Dielectric Constant=	0	0	

Lampiran 5 – Tabel Properti Saturated Water

TABLE A-9

Properties of saturated water

Temp. $T, ^\circ\text{C}$	Saturation Pressure $P_{\text{sat}}, \text{kPa}$	Density $\rho, \text{kg/m}^3$		Enthalpy of Vaporization $h_{\text{fg}}, \text{kJ/kg}$	Specific Heat $c_p, \text{J/kg}\cdot\text{K}$		Thermal Conductivity $k, \text{W/m}\cdot\text{K}$		Dynamic Viscosity $\mu, \text{kg/m}\cdot\text{s}$		Prandtl Number Pr		Volume Expansion Coefficient $\beta, 1/\text{K}$
		Liquid	Vapor		Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	
0.01	0.6113	999.8	0.0048	2501	4217	1854	0.561	0.0171	1.792×10^{-3}	0.922×10^{-5}	13.5	1.00	-0.068×10^{-3}
5	0.8721	999.9	0.0068	2490	4205	1857	0.571	0.0173	1.519×10^{-3}	0.934×10^{-5}	11.2	1.00	0.015×10^{-3}
10	1.2276	999.7	0.0094	2478	4194	1862	0.580	0.0176	1.307×10^{-3}	0.946×10^{-5}	9.45	1.00	0.733×10^{-3}
15	1.7051	999.1	0.0128	2466	4185	1863	0.589	0.0179	1.138×10^{-3}	0.959×10^{-5}	8.09	1.00	0.138×10^{-3}
20	2.339	998.0	0.0173	2454	4182	1867	0.598	0.0182	1.002×10^{-3}	0.973×10^{-5}	7.01	1.00	0.195×10^{-3}
25	3.169	997.0	0.0231	2442	4180	1870	0.607	0.0186	0.891×10^{-3}	0.987×10^{-5}	6.14	1.00	0.247×10^{-3}
30	4.246	996.0	0.0304	2431	4178	1875	0.615	0.0189	0.798×10^{-3}	1.001×10^{-5}	5.42	1.00	0.294×10^{-3}
35	5.628	994.0	0.0397	2419	4178	1880	0.623	0.0192	0.720×10^{-3}	1.016×10^{-5}	4.83	1.00	0.337×10^{-3}
40	7.384	992.1	0.0512	2407	4179	1885	0.631	0.0196	0.653×10^{-3}	1.031×10^{-5}	4.32	1.00	0.377×10^{-3}
45	9.593	990.1	0.0655	2395	4180	1892	0.637	0.0200	0.596×10^{-3}	1.046×10^{-5}	3.91	1.00	0.415×10^{-3}
50	12.35	988.1	0.0831	2383	4181	1900	0.644	0.0204	0.547×10^{-3}	1.062×10^{-5}	3.55	1.00	0.451×10^{-3}
55	15.76	985.2	0.1045	2371	4183	1908	0.649	0.0208	0.504×10^{-3}	1.077×10^{-5}	3.25	1.00	0.484×10^{-3}
60	19.94	983.3	0.1304	2359	4185	1916	0.654	0.0212	0.467×10^{-3}	1.093×10^{-5}	2.99	1.00	0.517×10^{-3}
65	25.03	980.4	0.1614	2346	4187	1926	0.659	0.0216	0.433×10^{-3}	1.110×10^{-5}	2.75	1.00	0.548×10^{-3}
70	31.19	977.5	0.1983	2334	4190	1936	0.663	0.0221	0.404×10^{-3}	1.126×10^{-5}	2.55	1.00	0.578×10^{-3}
75	38.58	974.7	0.2421	2321	4193	1948	0.667	0.0225	0.378×10^{-3}	1.142×10^{-5}	2.38	1.00	0.607×10^{-3}
80	47.39	971.8	0.2935	2309	4197	1962	0.670	0.0230	0.355×10^{-3}	1.159×10^{-5}	2.22	1.00	0.653×10^{-3}
85	57.83	968.1	0.3536	2296	4201	1977	0.673	0.0235	0.333×10^{-3}	1.176×10^{-5}	2.08	1.00	0.670×10^{-3}
90	70.14	965.3	0.4235	2283	4206	1993	0.675	0.0240	0.315×10^{-3}	1.193×10^{-5}	1.96	1.00	0.702×10^{-3}
95	84.55	961.5	0.5045	2270	4212	2010	0.677	0.0246	0.297×10^{-3}	1.210×10^{-5}	1.85	1.00	0.716×10^{-3}
100	101.33	957.9	0.5978	2257	4217	2029	0.679	0.0251	0.282×10^{-3}	1.227×10^{-5}	1.75	1.00	0.750×10^{-3}
110	143.27	950.6	0.8263	2230	4229	2071	0.682	0.0262	0.255×10^{-3}	1.261×10^{-5}	1.58	1.00	0.798×10^{-3}
120	198.53	943.4	1.121	2203	4244	2120	0.683	0.0275	0.232×10^{-3}	1.296×10^{-5}	1.44	1.00	0.858×10^{-3}
130	270.1	934.6	1.496	2174	4263	2177	0.684	0.0288	0.213×10^{-3}	1.330×10^{-5}	1.33	1.01	0.913×10^{-3}
140	361.3	921.7	1.965	2145	4286	2244	0.683	0.0301	0.197×10^{-3}	1.365×10^{-5}	1.24	1.02	0.970×10^{-3}
150	475.8	916.6	2.546	2114	4311	2314	0.682	0.0316	0.183×10^{-3}	1.399×10^{-5}	1.16	1.02	1.025×10^{-3}
160	617.8	907.4	3.256	2083	4340	2420	0.680	0.0331	0.170×10^{-3}	1.434×10^{-5}	1.09	1.05	1.145×10^{-3}
170	791.7	897.7	4.119	2050	4370	2490	0.677	0.0347	0.160×10^{-3}	1.468×10^{-5}	1.03	1.05	1.178×10^{-3}
180	1,002.1	887.3	5.153	2015	4410	2590	0.673	0.0364	0.150×10^{-3}	1.502×10^{-5}	0.983	1.07	1.210×10^{-3}
190	1,254.4	876.4	6.388	1979	4460	2710	0.669	0.0382	0.142×10^{-3}	1.537×10^{-5}	0.947	1.09	1.280×10^{-3}
200	1,553.8	864.3	7.852	1941	4500	2840	0.663	0.0401	0.134×10^{-3}	1.571×10^{-5}	0.910	1.11	1.350×10^{-3}
220	2,318	840.3	11.60	1859	4610	3110	0.650	0.0442	0.122×10^{-3}	1.641×10^{-5}	0.865	1.15	1.520×10^{-3}
240	3,344	813.7	16.73	1767	4760	3520	0.632	0.0487	0.111×10^{-3}	1.712×10^{-5}	0.836	1.24	1.720×10^{-3}
260	4,688	783.7	23.69	1663	4970	4070	0.609	0.0540	0.102×10^{-3}	1.788×10^{-5}	0.832	1.35	2.000×10^{-3}
280	6,412	750.8	33.15	1544	5280	4835	0.581	0.0605	0.094×10^{-3}	1.870×10^{-5}	0.854	1.49	2.380×10^{-3}
300	8,581	713.8	46.15	1405	5750	5980	0.548	0.0695	0.086×10^{-3}	1.965×10^{-5}	0.902	1.69	2.950×10^{-3}
320	11,274	667.1	64.57	1239	6540	7900	0.509	0.0836	0.078×10^{-3}	2.084×10^{-5}	1.00	1.97	
340	14,586	610.5	92.62	1028	8240	11,870	0.469	0.110	0.070×10^{-3}	2.255×10^{-5}	1.23	2.43	
360	18,651	528.3	144.0	720	14,690	25,800	0.427	0.178	0.060×10^{-3}	2.571×10^{-5}	2.06	3.73	
374.14	22,090	317.0	317.0	0	—	—	—	—	0.043×10^{-3}	4.313×10^{-5}			

Lampiran 6 – Tabel Properti Udara pada Tekanan 1 atm

TABLE A-15

Properties of air at 1 atm pressure

Temp. <i>T</i> , °C	Density ρ , kg/m ³	Specific Heat c_p , J/kg·K	Thermal Conductivity k , W/m·K	Thermal Diffusivity α , m ² /s	Dynamic Viscosity μ , kg/m·s	Kinematic Viscosity ν , m ² /s	Prandtl Number Pr
-150	2.866	983	0.01171	4.158×10^{-6}	8.636×10^{-6}	3.013×10^{-6}	0.7246
-100	2.038	966	0.01582	8.036×10^{-6}	1.189×10^{-5}	5.837×10^{-6}	0.7263
-50	1.582	999	0.01979	1.252×10^{-5}	1.474×10^{-5}	9.319×10^{-6}	0.7440
-40	1.514	1002	0.02057	1.356×10^{-5}	1.527×10^{-5}	1.008×10^{-5}	0.7436
-30	1.451	1004	0.02134	1.465×10^{-5}	1.579×10^{-5}	1.087×10^{-5}	0.7425
-20	1.394	1005	0.02211	1.578×10^{-5}	1.630×10^{-5}	1.169×10^{-5}	0.7408
-10	1.341	1006	0.02288	1.696×10^{-5}	1.680×10^{-5}	1.252×10^{-5}	0.7387
0	1.292	1006	0.02364	1.818×10^{-5}	1.729×10^{-5}	1.338×10^{-5}	0.7362
5	1.269	1006	0.02401	1.880×10^{-5}	1.754×10^{-5}	1.382×10^{-5}	0.7350
10	1.246	1006	0.02439	1.944×10^{-5}	1.778×10^{-5}	1.426×10^{-5}	0.7336
15	1.225	1007	0.02476	2.009×10^{-5}	1.802×10^{-5}	1.470×10^{-5}	0.7323
20	1.204	1007	0.02514	2.074×10^{-5}	1.825×10^{-5}	1.516×10^{-5}	0.7309
25	1.184	1007	0.02551	2.141×10^{-5}	1.849×10^{-5}	1.562×10^{-5}	0.7296
30	1.164	1007	0.02588	2.208×10^{-5}	1.872×10^{-5}	1.608×10^{-5}	0.7282
35	1.145	1007	0.02625	2.277×10^{-5}	1.895×10^{-5}	1.655×10^{-5}	0.7268
40	1.127	1007	0.02662	2.346×10^{-5}	1.918×10^{-5}	1.702×10^{-5}	0.7255
45	1.109	1007	0.02699	2.416×10^{-5}	1.941×10^{-5}	1.750×10^{-5}	0.7241
50	1.092	1007	0.02735	2.487×10^{-5}	1.963×10^{-5}	1.798×10^{-5}	0.7228
60	1.059	1007	0.02808	2.632×10^{-5}	2.008×10^{-5}	1.896×10^{-5}	0.7202
70	1.028	1007	0.02881	2.780×10^{-5}	2.052×10^{-5}	1.995×10^{-5}	0.7177
80	0.9994	1008	0.02953	2.931×10^{-5}	2.096×10^{-5}	2.097×10^{-5}	0.7154
90	0.9718	1008	0.03024	3.086×10^{-5}	2.139×10^{-5}	2.201×10^{-5}	0.7132
100	0.9458	1009	0.03095	3.243×10^{-5}	2.181×10^{-5}	2.306×10^{-5}	0.7111
120	0.8977	1011	0.03235	3.565×10^{-5}	2.264×10^{-5}	2.522×10^{-5}	0.7073
140	0.8542	1013	0.03374	3.898×10^{-5}	2.345×10^{-5}	2.745×10^{-5}	0.7041
160	0.8148	1016	0.03511	4.241×10^{-5}	2.420×10^{-5}	2.975×10^{-5}	0.7014
180	0.7788	1019	0.03646	4.593×10^{-5}	2.504×10^{-5}	3.212×10^{-5}	0.6992
200	0.7459	1023	0.03779	4.954×10^{-5}	2.577×10^{-5}	3.455×10^{-5}	0.6974
250	0.6746	1033	0.04104	5.890×10^{-5}	2.760×10^{-5}	4.091×10^{-5}	0.6946
300	0.6158	1044	0.04418	6.871×10^{-5}	2.934×10^{-5}	4.765×10^{-5}	0.6935
350	0.5664	1056	0.04721	7.892×10^{-5}	3.101×10^{-5}	5.475×10^{-5}	0.6937
400	0.5243	1069	0.05015	8.951×10^{-5}	3.261×10^{-5}	6.219×10^{-5}	0.6948
450	0.4880	1081	0.05298	1.004×10^{-4}	3.415×10^{-5}	6.997×10^{-5}	0.6965
500	0.4565	1093	0.05572	1.117×10^{-4}	3.563×10^{-5}	7.806×10^{-5}	0.6986
600	0.4042	1115	0.06093	1.352×10^{-4}	3.846×10^{-5}	9.515×10^{-5}	0.7037
700	0.3627	1135	0.06581	1.598×10^{-4}	4.111×10^{-5}	1.133×10^{-4}	0.7092
800	0.3289	1153	0.07037	1.855×10^{-4}	4.362×10^{-5}	1.326×10^{-4}	0.7149
900	0.3008	1169	0.07465	2.122×10^{-4}	4.600×10^{-5}	1.529×10^{-4}	0.7206
1000	0.2772	1184	0.07868	2.398×10^{-4}	4.826×10^{-5}	1.741×10^{-4}	0.7260
1500	0.1990	1234	0.09599	3.908×10^{-4}	5.817×10^{-5}	2.922×10^{-4}	0.7478
2000	0.1553	1264	0.11113	5.664×10^{-4}	6.630×10^{-5}	4.270×10^{-4}	0.7539

Lampiran 7 – Spesifikasi Anemometer GM816



Specification

Air velocity

Unit	Range	Resolution	Threshold	Accuracy
M/s	0~30	0.1	0.1	±5%
Ft/min	0~5860	19	39	±5%
Knots	0~55	0.219	0.1	±5%
Mph	0~65	0.2	0.2	±5%

Temperature

Unit	Range	Resolution	Accuracy
°C	-10°C~+45°C	0.2	±2°C
°F	14°F~113°F	0.36	±3.6°

Battery	CR2032 3.0V (Included)
Thermometer	NTC thermometer
Operating temperature	-10°C~+45°C(14°F~113°F)
Operating humidity	Less than 90%RH
Store temperature	-40°C~+60°C(-40°F~140°F)
Current consumption	Approx. 3mA
Weight	52g
Dimension	40x18x105mm

Lampiran 8 – Spesifikasi Humidity and Temperature Meter



This meter is widely used in communication center room, etc.

4.Specifications

Humidity	Measuring range: 0%~100%RH		
	Range	Accuracy	Resolution
	0%~20%RH	±4.0%	0.1
	20%~40%RH	±3.0%	
	40%~60%RH	±2.5%	
	60%~80%RH	±3.0%	
	80%~100%RH	±4.0%	
Temperature	Range: -30℃~70℃ (-22℉~158℉)		
	Range	Accuracy	Resolution
	-30℃~-10℃ (-22℉~14℉)	±1.0℃ (±1.8℉)	0.1℃
-10℃~70℃ (14℉~158℉)	±0.5℃ (±0.9℉)		
Dimension(L*W*H)	165* 55* 38mm		
Weight	88g		
Storage conditions: -20℃~60℃, 10%RH~75%RH			

5.Meter Description

Lampiran 9 – Spesifikasi Infrared Thermometer GM320



Specification	
Temperature range	-50 ~ 400°C (-58 ~ 752°F)
Accuracy	0°C~400°C (32°F~752°F) : $\pm 1.5^{\circ}\text{C}$ ($\pm 2.7^{\circ}\text{F}$) or $\pm 1.5\%$ -50°C~0°C (-58°F~32°F) : $\pm 3^{\circ}\text{C}$ ($\pm 5^{\circ}\text{F}$) Whichever is greater
Resolution	0.1°C or 0.1°F
Repeatability	1% of reading or 1°C
Response time	500 mSec, 95% response
Spectral response	5-14 μm
Emissivity	0.95 Preset
Distance to Spot size	12:1
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)
Operating Humidity	10%RH~95%RH non-condensing, up to 30°C (86°F)
Storage Temperature	-20°C ~ 60°C (-4°F~140°F)
Power	1.5V AAA*2 battery
Typical battery life (Alkaline)	Non-laser mode: 22 hrs; Laser Models: 12 hrs
Weight	115.1g
Dimension	144.5*38*93mm

Lampiran 10 – Spesifikasi Clamp Meter



Specifications:

Function	Range	Basic Accuracy (%rdg + digits)
AC Current	2.000A	$\pm(2.5\% + 10d)$
	20.00A	$\pm(2.5\% + 4d)$
	200.0A	$\pm(2.5\% + 5d)$
	400A	$\pm(3\% + 5d)$
DC Voltage	200mV, 2V, 20V, 200V, 600V	$\pm(0.5\% + 1d)$
AC Voltage	200mV, 2V, 20V, 200V, 600V	$\pm(1.5\% + 2d)$
Resistance (Ω)	200, 2k, 20k, 200k, 2M, 20M	$\pm(1.2\% + 2d)$
Continuity Check	Buzzer sounds at approx.50 Ω .	
Diode	Test current 0.4mA; Open circuit voltage 1.5V	

Lampiran 11 – Gambar Teknik Modifikasi Mesin Penghasil Air

