



Opteon™ XP30

Refrigerant

Thermodynamic Properties of Opteon™ XP30 (R-514A) SI Units

Physical Properties

Molecular Weight	139.6 lb/lb-mole
Boiling Point at One Atmosphere	29.1 °C
Critical Temperature	178.1 °C
Critical Pressure	3519.8 kPa
Critical Density	472.68 kg/m ³
Critical Volume	0.0021 m ³ /kg
Ozone Depletion Potential	0
Global Warming Potential (AR5)	2
ASHRAE Standard 34 Safety Rating	B1

Units and Factors

t = temperature in °C
P = pressure in kiloPascals absolute (kPa [abs])
 v_f = volume of saturated liquid in m³/kg
 v_g = volume of saturated vapor in m³/kg
V = volume of superheated vapor in m³/kg
 $d_f = 1/v_f$ = density of saturated liquid in kg/m³
 $d_g = 1/v_g$ = density of saturated vapor in kg/m³
 h_f = enthalpy of saturated liquid in kJ/kg
 h_{fg} = enthalpy of vaporization in kJ/kg
 h_g = enthalpy of saturated vapor in kJ/kg
H = enthalpy of superheated vapor in kJ/kg
 s_f = entropy of saturated liquid in kJ/(kg) (K)
 s_g = entropy of saturated vapor in kJ/(kg) (K)
S = entropy of superheated vapor in kJ/(kg) (K)

One atmosphere = 101.325 kPa
Reference point for enthalpy and entropy:
 $h_f = 200$ kJ/kg at 0°C
 $s_f = 1$ kJ/kg-K at 0°C

This information is based on NIST Standard Database 23, Version 9.1 (Lemmon, E.W.; Huber, M.L.; McLinden, M.O.; REFPROP Reference Fluid Thermodynamic and Transport Properties - National Institute of Standards and Technology, 2013) using Chemours interaction parameters.

Opteon™ XP30 (R-514A)
Saturation Properties - Temperature Table

Temp °C	Pressure [kPa]		Volume [m ³ /kg]		Density [kg/m ³]		Enthalpy [kJ/kg]			Entropy [kJ/kg-K]		Temp °C
	Liquid P _f	Vapor P _g	Liquid v _f	Vapor v _g	Liquid d _f	Vapor d _g	Liquid H _f	Latent H _{fg}	Vapor H _g	Liquid S _f	Vapor S _g	
152	2209.383	2207.713	0.001236	0.0068	809.3	147.188	406.3	93.5	499.8	1.585	1.804	152
153	2249.305	2247.553	0.001247	0.0066	801.9	151.295	408.2	91.8	500.0	1.589	1.804	153
154	2289.842	2287.999	0.001259	0.0064	794.4	155.582	410.1	90.0	500.1	1.593	1.804	154
155	2331.009	2329.067	0.001271	0.0062	786.8	160.065	412.1	88.2	500.3	1.598	1.804	155
156	2372.823	2370.771	0.001284	0.0061	779.0	164.760	414.0	86.4	500.3	1.602	1.803	156
157	2415.303	2413.129	0.001297	0.0059	771.2	169.685	416.0	84.4	500.4	1.607	1.803	157
158	2458.469	2456.162	0.001310	0.0057	763.2	174.863	417.9	82.5	500.4	1.611	1.802	158
159	2502.343	2499.885	0.001324	0.0055	755.1	180.316	419.9	80.5	500.4	1.616	1.802	159
160	2546.950	2544.329	0.001339	0.0054	746.8	186.074	422.0	78.4	500.3	1.620	1.801	160
161	2592.318	2589.515	0.001354	0.0052	738.4	192.167	424.0	76.2	500.2	1.625	1.800	161
162	2638.474	2635.471	0.001370	0.0050	729.7	198.630	426.1	74.0	500.1	1.629	1.799	162
163	2685.453	2682.227	0.001387	0.0049	720.9	205.505	428.3	71.6	499.9	1.634	1.798	163
164	2733.289	2729.819	0.001405	0.0047	711.9	212.839	430.4	69.2	499.6	1.639	1.797	164
165	2782.021	2778.282	0.001423	0.0045	702.5	220.686	432.6	66.7	499.3	1.644	1.796	165
166	2831.690	2827.661	0.001443	0.0044	693.0	229.106	434.8	64.0	498.8	1.649	1.794	166
167	2882.343	2878.000	0.001464	0.0042	683.0	238.169	437.1	61.2	498.4	1.654	1.793	167
168	2934.027	2929.351	0.001486	0.0040	672.8	247.956	439.5	58.3	497.8	1.659	1.791	168
169	2986.792	2981.771	0.001511	0.0039	662.0	258.559	441.9	55.2	497.1	1.664	1.789	169
170	3040.685	3035.322	0.001537	0.0037	650.8	270.084	444.4	51.9	496.3	1.670	1.787	170
171	3095.762	3090.070	0.001565	0.0035	638.9	282.655	447.0	48.4	495.4	1.675	1.784	171
172	3152.060	3146.088	0.001597	0.0034	626.2	296.430	449.6	44.7	494.4	1.681	1.782	172
173	3209.616	3203.450	0.001633	0.0032	612.5	311.615	452.5	40.7	493.1	1.687	1.778	173
174	3268.452	3262.235	0.001674	0.0030	597.5	328.520	455.5	36.3	491.7	1.694	1.775	174
175	3328.572	3322.525	0.001722	0.0029	580.7	347.663	458.8	31.3	490.1	1.701	1.771	175
176	3389.945	3384.417	0.001783	0.0027	560.8	370.076	462.4	25.6	488.0	1.709	1.766	176
177	3452.463	3448.064	0.001868	0.0025	535.2	398.437	466.9	18.3	485.2	1.718	1.759	177
178	3515.457	3514.353	0.002055	0.0022	486.6	452.800	474.4	4.5	478.9	1.735	1.745	178

Opteon™ XP30 (R-514A)

Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	10			20			30			40			Temp °C
	-22.18			-9.08			-0.63			5.76			
	V	H	S	V	H	S	V	H	S	V	H	S	
	1.4824	384.0	1.738	0.7757	393.5	1.734	0.0007	175.8	0.908	0.0007	175.8	0.908	
-20	1.4957	385.7	1.744										-20
-15	1.5262	389.4	1.759										-15
-10	1.5566	393.2	1.773										-10
-5	1.5870	397.1	1.788	0.7883	396.7	1.745							-5
0	1.6173	400.9	1.802	0.8037	400.6	1.760	0.5326	400.2	1.735				0
5	1.6476	404.9	1.816	0.8191	404.5	1.774	0.5430	404.2	1.749				5
10	1.6778	408.8	1.830	0.8344	408.5	1.788	0.5533	408.2	1.763	0.4128	407.8	1.745	10
15	1.7080	412.8	1.844	0.8497	412.5	1.802	0.5637	412.2	1.777	0.4206	411.9	1.759	15
20	1.7382	416.9	1.858	0.8650	416.6	1.816	0.5740	416.3	1.791	0.4284	416.0	1.773	20
25	1.7684	420.9	1.872	0.8803	420.6	1.830	0.5843	420.4	1.805	0.4362	420.1	1.787	25
30	1.7985	425.0	1.886	0.8955	424.8	1.844	0.5945	424.5	1.819	0.4440	424.2	1.801	30
35	1.8286	429.2	1.899	0.9107	428.9	1.857	0.6048	428.7	1.833	0.4518	428.4	1.815	35
40	1.8587	433.4	1.913	0.9259	433.1	1.871	0.6150	432.9	1.846	0.4595	432.6	1.829	40
45	1.8887	437.6	1.926	0.9411	437.4	1.884	0.6252	437.1	1.860	0.4672	436.9	1.842	45
50	1.9188	441.9	1.940	0.9562	441.7	1.898	0.6354	441.4	1.873	0.4749	441.2	1.855	50
55	1.9488	446.2	1.953	0.9714	446.0	1.911	0.6455	445.7	1.886	0.4826	445.5	1.869	55
60	1.9788	450.5	1.966	0.9865	450.3	1.924	0.6557	450.1	1.900	0.4903	449.9	1.882	60
65	2.0088	454.9	1.979	1.0016	454.7	1.937	0.6659	454.5	1.913	0.4980	454.3	1.895	65
70	2.0388	459.3	1.992	1.0167	459.1	1.950	0.6760	458.9	1.926	0.5056	458.7	1.908	70
75	2.0688	463.8	2.005	1.0318	463.6	1.963	0.6861	463.4	1.939	0.5133	463.2	1.921	75
80	2.0988	468.2	2.017	1.0469	468.1	1.976	0.6962	467.9	1.951	0.5209	467.7	1.934	80
85	2.1288	472.8	2.030	1.0619	472.6	1.989	0.7063	472.4	1.964	0.5285	472.2	1.947	85
90	2.1587	477.3	2.043	1.0770	477.1	2.001	0.7164	477.0	1.977	0.5361	476.8	1.959	90
95	2.1886	481.9	2.055	1.0921	481.7	2.014	0.7265	481.6	1.989	0.5437	481.4	1.972	95
100	2.2186	486.5	2.068	1.1071	486.4	2.026	0.7366	486.2	2.002	0.5513	486.1	1.984	100
105	2.2485	491.2	2.080	1.1221	491.0	2.039	0.7467	490.9	2.014	0.5589	490.7	1.997	105
110	2.2784	495.9	2.093	1.1372	495.7	2.051	0.7567	495.6	2.027	0.5665	495.4	2.009	110
115	2.3084	500.6	2.105	1.1522	500.4	2.063	0.7668	500.3	2.039	0.5741	500.2	2.021	115
120	2.3383	505.3	2.117	1.1672	505.2	2.075	0.7769	505.1	2.051	0.5817	504.9	2.034	120
125	2.3682	510.1	2.129	1.1822	510.0	2.088	0.7869	509.9	2.063	0.5892	509.7	2.046	125

Opteon™ XP30 (R-514A)

Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	50			60			70			80			Temp °C
	10.97			15.40			19.26			22.72			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.3297	408.3	1.734	0.2781	411.6	1.735	0.0007	212.3	1.044	0.0007	212.3	1.044	
15	0.3348	411.6	1.745										15
20	0.3411	415.7	1.759	0.2829	415.4	1.748	0.2414	415.1	1.738				20
25	0.3474	419.8	1.773	0.2882	419.5	1.762	0.2460	419.3	1.752	0.2142	419.0	1.744	25
30	0.3537	424.0	1.787	0.2935	423.7	1.776	0.2505	423.4	1.766	0.2183	423.2	1.757	30
35	0.3600	428.2	1.801	0.2988	427.9	1.790	0.2551	427.7	1.780	0.2223	427.4	1.771	35
40	0.3662	432.4	1.815	0.3040	432.2	1.803	0.2596	431.9	1.794	0.2263	431.7	1.785	40
45	0.3725	436.7	1.828	0.3093	436.4	1.817	0.2641	436.2	1.807	0.2303	436.0	1.799	45
50	0.3787	441.0	1.842	0.3145	440.7	1.830	0.2687	440.5	1.821	0.2343	440.3	1.812	50
55	0.3849	445.3	1.855	0.3197	445.1	1.844	0.2732	444.9	1.834	0.2382	444.7	1.826	55
60	0.3911	449.7	1.868	0.3249	449.5	1.857	0.2776	449.3	1.847	0.2422	449.1	1.839	60
65	0.3972	454.1	1.881	0.3301	453.9	1.870	0.2821	453.7	1.860	0.2461	453.5	1.852	65
70	0.4034	458.5	1.894	0.3353	458.3	1.883	0.2866	458.2	1.874	0.2501	458.0	1.865	70
75	0.4096	463.0	1.907	0.3404	462.8	1.896	0.2910	462.6	1.886	0.2540	462.5	1.878	75
80	0.4157	467.5	1.920	0.3456	467.3	1.909	0.2955	467.2	1.899	0.2579	467.0	1.891	80
85	0.4218	472.1	1.933	0.3507	471.9	1.922	0.2999	471.7	1.912	0.2618	471.5	1.904	85
90	0.4280	476.6	1.946	0.3558	476.5	1.934	0.3043	476.3	1.925	0.2657	476.1	1.917	90
95	0.4341	481.3	1.958	0.3610	481.1	1.947	0.3087	480.9	1.938	0.2696	480.8	1.929	95
100	0.4402	485.9	1.971	0.3661	485.7	1.960	0.3131	485.6	1.950	0.2734	485.4	1.942	100
105	0.4463	490.6	1.983	0.3712	490.4	1.972	0.3176	490.3	1.963	0.2773	490.1	1.954	105
110	0.4524	495.3	1.996	0.3763	495.1	1.984	0.3219	495.0	1.975	0.2812	494.8	1.967	110
115	0.4585	500.0	2.008	0.3814	499.9	1.997	0.3263	499.7	1.987	0.2850	499.6	1.979	115
120	0.4646	504.8	2.020	0.3865	504.7	2.009	0.3307	504.5	2.000	0.2889	504.4	1.991	120
125	0.4706	509.6	2.032	0.3916	509.5	2.021	0.3351	509.3	2.012	0.2927	509.2	2.004	125
130	0.4767	514.4	2.044	0.3967	514.3	2.033	0.3395	514.2	2.024	0.2966	514.0	2.016	130
135	0.4828	519.3	2.056	0.4017	519.2	2.045	0.3438	519.0	2.036	0.3004	518.9	2.028	135
140	0.4889	524.2	2.068	0.4068	524.1	2.057	0.3482	524.0	2.048	0.3042	523.8	2.040	140
145	0.4949	529.1	2.080	0.4119	529.0	2.069	0.3526	528.9	2.060	0.3081	528.8	2.051	145
150	0.5010	534.1	2.092	0.4169	534.0	2.081	0.3569	533.9	2.071	0.3119	533.7	2.063	150
155	0.5070	539.1	2.104	0.4220	539.0	2.093	0.3613	538.8	2.083	0.3157	538.7	2.075	155
160	0.5131	544.1	2.115	0.4271	544.0	2.104	0.3656	543.9	2.095	0.3195	543.8	2.087	160

Opteon™ XP30 (R-514A)

Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	90			100			101.325			110			Temp °C
	25.84			28.70			29.06			31.34			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.1902	419.4	1.738	0.1723	421.6	1.739	0.0008	229.4	1.103	0.0008	229.4	1.103	
30	0.1932	422.9	1.750	0.1731	422.7	1.743	0.1708	422.6	1.742				30
35	0.1968	427.2	1.764	0.1764	426.9	1.757	0.1740	426.9	1.756	0.1597	426.7	1.751	35
40	0.2004	431.4	1.777	0.1797	431.2	1.771	0.1772	431.2	1.770	0.1627	431.0	1.764	40
45	0.2040	435.7	1.791	0.1829	435.5	1.784	0.1804	435.5	1.783	0.1657	435.3	1.778	45
50	0.2075	440.1	1.805	0.1861	439.9	1.798	0.1836	439.8	1.797	0.1686	439.6	1.792	50
55	0.2111	444.4	1.818	0.1893	444.2	1.811	0.1868	444.2	1.810	0.1716	444.0	1.805	55
60	0.2146	448.9	1.831	0.1926	448.6	1.825	0.1900	448.6	1.824	0.1745	448.4	1.819	60
65	0.2181	453.3	1.845	0.1957	453.1	1.838	0.1931	453.1	1.837	0.1774	452.9	1.832	65
70	0.2217	457.8	1.858	0.1989	457.6	1.851	0.1963	457.5	1.850	0.1803	457.4	1.845	70
75	0.2252	462.3	1.871	0.2021	462.1	1.864	0.1994	462.1	1.863	0.1832	461.9	1.858	75
80	0.2287	466.8	1.884	0.2053	466.6	1.877	0.2025	466.6	1.876	0.1861	466.4	1.871	80
85	0.2322	471.4	1.897	0.2084	471.2	1.890	0.2056	471.2	1.889	0.1890	471.0	1.884	85
90	0.2356	476.0	1.909	0.2116	475.8	1.903	0.2088	475.8	1.902	0.1919	475.6	1.897	90
95	0.2391	480.6	1.922	0.2147	480.4	1.915	0.2119	480.4	1.915	0.1948	480.3	1.909	95
100	0.2426	485.3	1.935	0.2179	485.1	1.928	0.2150	485.1	1.927	0.1976	485.0	1.922	100
105	0.2460	490.0	1.947	0.2210	489.8	1.940	0.2180	489.8	1.940	0.2005	489.7	1.935	105
110	0.2495	494.7	1.959	0.2241	494.5	1.953	0.2211	494.5	1.952	0.2033	494.4	1.947	110
115	0.2529	499.5	1.972	0.2272	499.3	1.965	0.2242	499.3	1.964	0.2062	499.2	1.959	115
120	0.2564	504.2	1.984	0.2303	504.1	1.978	0.2273	504.1	1.977	0.2090	504.0	1.972	120
125	0.2598	509.1	1.996	0.2334	508.9	1.990	0.2303	508.9	1.989	0.2119	508.8	1.984	125
130	0.2632	513.9	2.008	0.2365	513.8	2.002	0.2334	513.8	2.001	0.2147	513.7	1.996	130
135	0.2666	518.8	2.020	0.2396	518.7	2.014	0.2364	518.7	2.013	0.2175	518.5	2.008	135
140	0.2701	523.7	2.032	0.2427	523.6	2.026	0.2395	523.6	2.025	0.2203	523.5	2.020	140
145	0.2735	528.7	2.044	0.2458	528.5	2.038	0.2425	528.5	2.037	0.2231	528.4	2.032	145
150	0.2769	533.6	2.056	0.2489	533.5	2.050	0.2456	533.5	2.049	0.2259	533.4	2.044	150
155	0.2803	538.6	2.068	0.2519	538.5	2.061	0.2486	538.5	2.061	0.2288	538.4	2.055	155
160	0.2837	543.7	2.080	0.2550	543.5	2.073	0.2516	543.5	2.072	0.2316	543.4	2.067	160
165	0.2871	548.7	2.091	0.2581	548.6	2.085	0.2547	548.6	2.084	0.2344	548.5	2.079	165
170	0.2905	553.8	2.103	0.2611	553.7	2.096	0.2577	553.7	2.095	0.2371	553.6	2.090	170
175	0.2939	558.9	2.114	0.2642	558.8	2.108	0.2607	558.8	2.107	0.2399	558.7	2.102	175

Opteon™ XP30 (R-514A)

Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

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Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	120			130			140			150			Temp °C
	33.79			36.09			38.26			40.31			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.1451	425.4	1.742	0.1346	427.1	1.743	0.0008	238.8	1.134	0.0008	238.8	1.134	
35	0.1458	426.4	1.745										35
40	0.1486	430.7	1.759	0.1366	430.5	1.753	0.1263	430.3	1.748				40
45	0.1513	435.0	1.772	0.1391	434.8	1.767	0.1287	434.6	1.762	0.1197	434.4	1.758	45
50	0.1540	439.4	1.786	0.1417	439.2	1.781	0.1311	439.0	1.776	0.1219	438.7	1.771	50
55	0.1567	443.8	1.799	0.1442	443.6	1.794	0.1335	443.4	1.789	0.1241	443.2	1.785	55
60	0.1595	448.2	1.813	0.1467	448.0	1.808	0.1358	447.8	1.803	0.1264	447.6	1.798	60
65	0.1622	452.7	1.826	0.1492	452.5	1.821	0.1382	452.3	1.816	0.1286	452.1	1.812	65
70	0.1648	457.2	1.839	0.1517	457.0	1.834	0.1405	456.8	1.829	0.1307	456.6	1.825	70
75	0.1675	461.7	1.852	0.1542	461.5	1.847	0.1428	461.3	1.843	0.1329	461.1	1.838	75
80	0.1702	466.3	1.865	0.1567	466.1	1.860	0.1451	465.9	1.856	0.1351	465.7	1.851	80
85	0.1729	470.9	1.878	0.1592	470.7	1.873	0.1474	470.5	1.868	0.1373	470.3	1.864	85
90	0.1755	475.5	1.891	0.1616	475.3	1.886	0.1497	475.1	1.881	0.1394	475.0	1.877	90
95	0.1782	480.1	1.904	0.1641	480.0	1.899	0.1520	479.8	1.894	0.1416	479.6	1.890	95
100	0.1808	484.8	1.917	0.1665	484.6	1.911	0.1543	484.5	1.907	0.1437	484.3	1.902	100
105	0.1834	489.5	1.929	0.1690	489.4	1.924	0.1566	489.2	1.919	0.1459	489.1	1.915	105
110	0.1861	494.3	1.942	0.1714	494.1	1.936	0.1589	494.0	1.932	0.1480	493.8	1.927	110
115	0.1887	499.0	1.954	0.1738	498.9	1.949	0.1611	498.7	1.944	0.1501	498.6	1.940	115
120	0.1913	503.8	1.966	0.1763	503.7	1.961	0.1634	503.6	1.956	0.1522	503.4	1.952	120
125	0.1939	508.7	1.978	0.1787	508.5	1.973	0.1656	508.4	1.969	0.1543	508.3	1.964	125
130	0.1965	513.5	1.991	0.1811	513.4	1.986	0.1679	513.3	1.981	0.1564	513.1	1.977	130
135	0.1991	518.4	2.003	0.1835	518.3	1.998	0.1701	518.2	1.993	0.1585	518.0	1.989	135
140	0.2017	523.3	2.015	0.1859	523.2	2.010	0.1724	523.1	2.005	0.1606	523.0	2.001	140
145	0.2043	528.3	2.026	0.1883	528.2	2.022	0.1746	528.1	2.017	0.1627	527.9	2.013	145
150	0.2068	533.3	2.038	0.1907	533.2	2.033	0.1768	533.0	2.029	0.1648	532.9	2.024	150
155	0.2094	538.3	2.050	0.1931	538.2	2.045	0.1791	538.1	2.041	0.1669	537.9	2.036	155
160	0.2120	543.3	2.062	0.1955	543.2	2.057	0.1813	543.1	2.052	0.1690	543.0	2.048	160
165	0.2146	548.4	2.073	0.1978	548.3	2.068	0.1835	548.2	2.064	0.1711	548.1	2.060	165
170	0.2171	553.5	2.085	0.2002	553.4	2.080	0.1857	553.3	2.075	0.1731	553.2	2.071	170
175	0.2197	558.6	2.097	0.2026	558.5	2.092	0.1879	558.4	2.087	0.1752	558.3	2.083	175

Opteon™ XP30 (R-514A)
Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	160			170			180			190			Temp °C
	42.25			44.10			45.87			47.56			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.1106	431.7	1.746	0.1044	433.1	1.747	0.0008	248.9	1.166	0.0008	248.9	1.166	
45	0.1118	434.1	1.753	0.1048	433.9	1.749							45
50	0.1139	438.5	1.767	0.1068	438.3	1.763	0.1005	438.1	1.759	0.0949	437.9	1.755	50
55	0.1160	442.9	1.781	0.1088	442.7	1.776	0.1024	442.5	1.773	0.0967	442.3	1.769	55
60	0.1181	447.4	1.794	0.1108	447.2	1.790	0.1043	447.0	1.786	0.0985	446.8	1.782	60
65	0.1202	451.9	1.807	0.1127	451.7	1.803	0.1061	451.5	1.799	0.1002	451.3	1.796	65
70	0.1222	456.4	1.821	0.1147	456.2	1.817	0.1080	456.0	1.813	0.1020	455.8	1.809	70
75	0.1243	461.0	1.834	0.1166	460.8	1.830	0.1099	460.6	1.826	0.1038	460.4	1.822	75
80	0.1263	465.5	1.847	0.1186	465.4	1.843	0.1117	465.2	1.839	0.1055	465.0	1.835	80
85	0.1284	470.1	1.860	0.1205	470.0	1.856	0.1135	469.8	1.852	0.1073	469.6	1.849	85
90	0.1304	474.8	1.873	0.1224	474.6	1.869	0.1154	474.4	1.865	0.1090	474.3	1.861	90
95	0.1324	479.5	1.885	0.1244	479.3	1.882	0.1172	479.1	1.878	0.1108	479.0	1.874	95
100	0.1345	484.2	1.898	0.1263	484.0	1.894	0.1190	483.8	1.891	0.1125	483.7	1.887	100
105	0.1365	488.9	1.911	0.1282	488.7	1.907	0.1208	488.6	1.903	0.1142	488.4	1.900	105
110	0.1385	493.7	1.923	0.1301	493.5	1.919	0.1226	493.4	1.916	0.1159	493.2	1.912	110
115	0.1405	498.5	1.936	0.1320	498.3	1.932	0.1244	498.2	1.928	0.1176	498.0	1.925	115
120	0.1425	503.3	1.948	0.1338	503.1	1.944	0.1262	503.0	1.940	0.1193	502.8	1.937	120
125	0.1445	508.1	1.960	0.1357	508.0	1.956	0.1280	507.8	1.953	0.1210	507.7	1.949	125
130	0.1464	513.0	1.972	0.1376	512.9	1.969	0.1297	512.7	1.965	0.1227	512.6	1.962	130
135	0.1484	517.9	1.985	0.1395	517.8	1.981	0.1315	517.7	1.977	0.1244	517.5	1.974	135
140	0.1504	522.8	1.997	0.1413	522.7	1.993	0.1333	522.6	1.989	0.1261	522.5	1.986	140
145	0.1524	527.8	2.009	0.1432	527.7	2.005	0.1350	527.6	2.001	0.1278	527.5	1.998	145
150	0.1543	532.8	2.020	0.1450	532.7	2.017	0.1368	532.6	2.013	0.1294	532.5	2.010	150
155	0.1563	537.8	2.032	0.1469	537.7	2.028	0.1386	537.6	2.025	0.1311	537.5	2.021	155
160	0.1582	542.9	2.044	0.1487	542.8	2.040	0.1403	542.7	2.037	0.1328	542.5	2.033	160
165	0.1602	548.0	2.056	0.1506	547.9	2.052	0.1421	547.7	2.048	0.1344	547.6	2.045	165
170	0.1621	553.1	2.067	0.1524	553.0	2.063	0.1438	552.9	2.060	0.1361	552.8	2.056	170
175	0.1641	558.2	2.079	0.1543	558.1	2.075	0.1455	558.0	2.071	0.1377	557.9	2.068	175

Opteon™ XP30 (R-514A)
Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													Temp °C
°C	200			210			220			230			
	49.19			50.75			52.25			53.71			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0895	436.9	1.750	0.0855	438.1	1.750	0.0008	257.4	1.192	0.0008	257.4	1.192	
50	0.0898	437.7	1.752										50
55	0.0915	442.1	1.765	0.0869	441.9	1.762	0.0826	441.7	1.759	0.0787	441.5	1.756	55
60	0.0932	446.6	1.779	0.0885	446.4	1.776	0.0842	446.2	1.772	0.0803	446.0	1.769	60
65	0.0949	451.1	1.792	0.0901	450.9	1.789	0.0858	450.7	1.786	0.0818	450.5	1.783	65
70	0.0966	455.6	1.806	0.0918	455.4	1.802	0.0873	455.2	1.799	0.0833	455.0	1.796	70
75	0.0983	460.2	1.819	0.0934	460.0	1.816	0.0889	459.8	1.812	0.0848	459.6	1.809	75
80	0.1000	464.8	1.832	0.0950	464.6	1.829	0.0904	464.4	1.826	0.0863	464.3	1.823	80
85	0.1017	469.4	1.845	0.0966	469.3	1.842	0.0920	469.1	1.839	0.0877	468.9	1.836	85
90	0.1033	474.1	1.858	0.0982	473.9	1.855	0.0935	473.8	1.852	0.0892	473.6	1.849	90
95	0.1050	478.8	1.871	0.0998	478.6	1.868	0.0950	478.5	1.865	0.0907	478.3	1.862	95
100	0.1066	483.5	1.884	0.1013	483.4	1.880	0.0965	483.2	1.877	0.0921	483.0	1.874	100
105	0.1083	488.3	1.896	0.1029	488.1	1.893	0.0980	488.0	1.890	0.0936	487.8	1.887	105
110	0.1099	493.1	1.909	0.1045	492.9	1.906	0.0995	492.8	1.903	0.0950	492.6	1.900	110
115	0.1115	497.9	1.921	0.1060	497.7	1.918	0.1010	497.6	1.915	0.0964	497.4	1.912	115
120	0.1132	502.7	1.934	0.1076	502.6	1.931	0.1025	502.4	1.927	0.0979	502.3	1.925	120
125	0.1148	507.6	1.946	0.1091	507.4	1.943	0.1040	507.3	1.940	0.0993	507.2	1.937	125
130	0.1164	512.5	1.958	0.1107	512.3	1.955	0.1055	512.2	1.952	0.1007	512.1	1.949	130
135	0.1180	517.4	1.970	0.1122	517.3	1.967	0.1069	517.1	1.964	0.1021	517.0	1.961	135
140	0.1196	522.3	1.982	0.1137	522.2	1.979	0.1084	522.1	1.976	0.1035	522.0	1.973	140
145	0.1212	527.3	1.994	0.1153	527.2	1.991	0.1099	527.1	1.988	0.1049	527.0	1.985	145
150	0.1228	532.3	2.006	0.1168	532.2	2.003	0.1113	532.1	2.000	0.1063	532.0	1.997	150
155	0.1244	537.4	2.018	0.1183	537.3	2.015	0.1128	537.1	2.012	0.1077	537.0	2.009	155
160	0.1260	542.4	2.030	0.1198	542.3	2.027	0.1142	542.2	2.024	0.1091	542.1	2.021	160
165	0.1275	547.5	2.042	0.1213	547.4	2.038	0.1157	547.3	2.036	0.1105	547.2	2.033	165
170	0.1291	552.6	2.053	0.1228	552.5	2.050	0.1171	552.4	2.047	0.1119	552.3	2.044	170
175	0.1307	557.8	2.065	0.1243	557.7	2.062	0.1186	557.6	2.059	0.1133	557.5	2.056	175
180													180

Opteon™ XP30 (R-514A)
Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	240			250			260			270			Temp °C
	55.11			56.47			57.79			59.07			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0752	441.4	1.753	0.0723	442.4	1.754	0.0008	264.7	1.215	0.0008	264.7	1.215	
60	0.0767	445.7	1.766	0.0733	445.5	1.763	0.0703	445.3	1.761	0.0674	445.1	1.758	60
65	0.0781	450.3	1.780	0.0747	450.1	1.777	0.0716	449.9	1.774	0.0688	449.7	1.772	65
70	0.0796	454.8	1.793	0.0761	454.6	1.790	0.0730	454.4	1.788	0.0701	454.3	1.785	70
75	0.0810	459.4	1.807	0.0775	459.2	1.804	0.0743	459.1	1.801	0.0714	458.9	1.798	75
80	0.0824	464.1	1.820	0.0789	463.9	1.817	0.0757	463.7	1.814	0.0727	463.5	1.812	80
85	0.0839	468.7	1.833	0.0803	468.5	1.830	0.0770	468.4	1.827	0.0740	468.2	1.825	85
90	0.0853	473.4	1.846	0.0817	473.2	1.843	0.0783	473.1	1.840	0.0752	472.9	1.838	90
95	0.0867	478.1	1.859	0.0830	478.0	1.856	0.0796	477.8	1.853	0.0765	477.6	1.851	95
100	0.0881	482.9	1.872	0.0844	482.7	1.869	0.0809	482.6	1.866	0.0778	482.4	1.864	100
105	0.0895	487.7	1.884	0.0857	487.5	1.881	0.0822	487.3	1.879	0.0790	487.2	1.876	105
110	0.0909	492.5	1.897	0.0871	492.3	1.894	0.0835	492.1	1.891	0.0803	492.0	1.889	110
115	0.0922	497.3	1.909	0.0884	497.1	1.907	0.0848	497.0	1.904	0.0815	496.8	1.902	115
120	0.0936	502.1	1.922	0.0897	502.0	1.919	0.0861	501.9	1.916	0.0828	501.7	1.914	120
125	0.0950	507.0	1.934	0.0910	506.9	1.931	0.0874	506.7	1.929	0.0840	506.6	1.926	125
130	0.0964	511.9	1.946	0.0924	511.8	1.944	0.0887	511.7	1.941	0.0852	511.5	1.939	130
135	0.0977	516.9	1.959	0.0937	516.7	1.956	0.0899	516.6	1.953	0.0864	516.5	1.951	135
140	0.0991	521.8	1.971	0.0950	521.7	1.968	0.0912	521.6	1.965	0.0877	521.5	1.963	140
145	0.1004	526.8	1.983	0.0963	526.7	1.980	0.0924	526.6	1.977	0.0889	526.5	1.975	145
150	0.1018	531.9	1.995	0.0976	531.7	1.992	0.0937	531.6	1.989	0.0901	531.5	1.987	150
155	0.1031	536.9	2.006	0.0989	536.8	2.004	0.0949	536.7	2.001	0.0913	536.6	1.999	155
160	0.1044	542.0	2.018	0.1001	541.9	2.016	0.0962	541.8	2.013	0.0925	541.6	2.011	160
165	0.1058	547.1	2.030	0.1014	547.0	2.027	0.0974	546.9	2.025	0.0937	546.8	2.022	165
170	0.1071	552.2	2.042	0.1027	552.1	2.039	0.0986	552.0	2.037	0.0949	551.9	2.034	170
175	0.1084	557.4	2.053	0.1040	557.3	2.051	0.0999	557.2	2.048	0.0961	557.1	2.046	175
180													180
185													185
190													190
195	0.1137	578.3	2.099	0.1091	578.2	2.096	0.1048	578.1	2.094	0.1008	578.0	2.091	195
200	0.1150	583.6	2.110	0.1103	583.5	2.107	0.1060	583.4	2.105	0.1020	583.3	2.103	200
205	0.1163	588.9	2.121	0.1116	588.8	2.119	0.1072	588.7	2.116	0.1032	588.6	2.114	205

Opteon™ XP30 (R-514A)

Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	280			290			300			310			Temp °C
	60.32			61.53			62.71			63.86			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0649	445.2	1.756	0.0627	446.1	1.757	0.0008	271.2	1.234	0.0008	271.2	1.234	
65	0.0661	449.5	1.769	0.0636	449.3	1.766	0.0613	449.1	1.764	0.0591	448.9	1.762	65
70	0.0674	454.1	1.782	0.0648	453.9	1.780	0.0625	453.7	1.777	0.0603	453.5	1.775	70
75	0.0686	458.7	1.796	0.0661	458.5	1.793	0.0637	458.3	1.791	0.0614	458.1	1.789	75
80	0.0699	463.3	1.809	0.0673	463.1	1.807	0.0648	463.0	1.804	0.0626	462.8	1.802	80
85	0.0711	468.0	1.822	0.0685	467.8	1.820	0.0660	467.6	1.817	0.0637	467.5	1.815	85
90	0.0724	472.7	1.835	0.0697	472.5	1.833	0.0672	472.4	1.830	0.0649	472.2	1.828	90
95	0.0736	477.5	1.848	0.0709	477.3	1.846	0.0684	477.1	1.843	0.0660	476.9	1.841	95
100	0.0748	482.2	1.861	0.0721	482.1	1.859	0.0695	481.9	1.856	0.0671	481.7	1.854	100
105	0.0760	487.0	1.874	0.0733	486.9	1.871	0.0707	486.7	1.869	0.0682	486.5	1.867	105
110	0.0773	491.8	1.886	0.0744	491.7	1.884	0.0718	491.5	1.882	0.0693	491.4	1.880	110
115	0.0785	496.7	1.899	0.0756	496.5	1.897	0.0729	496.4	1.894	0.0704	496.2	1.892	115
120	0.0797	501.6	1.912	0.0768	501.4	1.909	0.0741	501.3	1.907	0.0715	501.1	1.905	120
125	0.0809	506.5	1.924	0.0779	506.3	1.922	0.0752	506.2	1.919	0.0726	506.0	1.917	125
130	0.0820	511.4	1.936	0.0791	511.3	1.934	0.0763	511.1	1.932	0.0737	511.0	1.929	130
135	0.0832	516.4	1.948	0.0802	516.2	1.946	0.0774	516.1	1.944	0.0748	516.0	1.942	135
140	0.0844	521.3	1.961	0.0814	521.2	1.958	0.0785	521.1	1.956	0.0759	521.0	1.954	140
145	0.0856	526.3	1.973	0.0825	526.2	1.970	0.0796	526.1	1.968	0.0770	526.0	1.966	145
150	0.0867	531.4	1.985	0.0836	531.3	1.982	0.0807	531.1	1.980	0.0780	531.0	1.978	150
155	0.0879	536.4	1.997	0.0848	536.3	1.994	0.0818	536.2	1.992	0.0791	536.1	1.990	155
160	0.0891	541.5	2.008	0.0859	541.4	2.006	0.0829	541.3	2.004	0.0801	541.2	2.002	160
165	0.0902	546.7	2.020	0.0870	546.5	2.018	0.0840	546.4	2.016	0.0812	546.3	2.013	165
170	0.0914	551.8	2.032	0.0881	551.7	2.029	0.0851	551.6	2.027	0.0823	551.5	2.025	170
175	0.0925	557.0	2.043	0.0892	556.9	2.041	0.0862	556.8	2.039	0.0833	556.6	2.037	175

Opteon™ XP30 (R-514A)
Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	320			330			340			350			Temp °C
	64.98			66.07			67.14			68.19			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0570	448.6	1.759	0.0554	449.5	1.760	0.0008	277.0	1.252	0.0008	277.0	1.252	
65	0.0570	448.7	1.759										65
70	0.0582	453.3	1.773	0.0562	453.1	1.771	0.0544	452.9	1.768	0.0527	452.7	1.766	70
75	0.0593	457.9	1.786	0.0573	457.7	1.784	0.0555	457.5	1.782	0.0537	457.3	1.780	75
80	0.0604	462.6	1.800	0.0584	462.4	1.797	0.0566	462.2	1.795	0.0548	462.0	1.793	80
85	0.0616	467.3	1.813	0.0595	467.1	1.811	0.0576	466.9	1.808	0.0558	466.7	1.806	85
90	0.0627	472.0	1.826	0.0606	471.8	1.824	0.0587	471.7	1.822	0.0568	471.5	1.819	90
95	0.0638	476.8	1.839	0.0617	476.6	1.837	0.0597	476.4	1.835	0.0579	476.3	1.833	95
100	0.0649	481.6	1.852	0.0628	481.4	1.850	0.0608	481.2	1.848	0.0589	481.1	1.846	100
105	0.0660	486.4	1.865	0.0638	486.2	1.862	0.0618	486.1	1.860	0.0599	485.9	1.858	105
110	0.0670	491.2	1.877	0.0649	491.1	1.875	0.0628	490.9	1.873	0.0609	490.7	1.871	110
115	0.0681	496.1	1.890	0.0659	495.9	1.888	0.0638	495.8	1.886	0.0619	495.6	1.884	115
120	0.0692	501.0	1.903	0.0670	500.8	1.900	0.0649	500.7	1.898	0.0629	500.5	1.896	120
125	0.0702	505.9	1.915	0.0680	505.8	1.913	0.0659	505.6	1.911	0.0639	505.5	1.909	125
130	0.0713	510.8	1.927	0.0690	510.7	1.925	0.0669	510.6	1.923	0.0648	510.4	1.921	130
135	0.0724	515.8	1.940	0.0700	515.7	1.937	0.0679	515.6	1.935	0.0658	515.4	1.934	135
140	0.0734	520.8	1.952	0.0711	520.7	1.950	0.0689	520.6	1.948	0.0668	520.4	1.946	140
145	0.0744	525.8	1.964	0.0721	525.7	1.962	0.0699	525.6	1.960	0.0678	525.5	1.958	145
150	0.0755	530.9	1.976	0.0731	530.8	1.974	0.0708	530.7	1.972	0.0687	530.5	1.970	150
155	0.0765	536.0	1.988	0.0741	535.9	1.986	0.0718	535.7	1.984	0.0697	535.6	1.982	155
160	0.0775	541.1	2.000	0.0751	541.0	1.998	0.0728	540.8	1.996	0.0706	540.7	1.994	160
165	0.0786	546.2	2.011	0.0761	546.1	2.009	0.0738	546.0	2.007	0.0716	545.9	2.005	165
170	0.0796	551.4	2.023	0.0771	551.3	2.021	0.0747	551.1	2.019	0.0725	551.0	2.017	170
175	0.0806	556.5	2.035	0.0781	556.4	2.033	0.0757	556.3	2.031	0.0734	556.2	2.029	175
180													180
185													185
190													190
195	0.0847	577.5	2.080	0.0820	577.4	2.079	0.0795	577.3	2.077	0.0772	577.2	2.075	195
200	0.0857	582.8	2.092	0.0830	582.7	2.090	0.0805	582.6	2.088	0.0781	582.5	2.086	200
205	0.0867	588.2	2.103	0.0840	588.1	2.101	0.0814	588.0	2.099	0.0790	587.9	2.097	205
210	0.0877	593.5	2.114	0.0849	593.4	2.112	0.0824	593.3	2.110	0.0799	593.2	2.108	210

Opteon™ XP30 (R-514A)
Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	360			370			380			390			Temp °C
	69.21			70.21			71.19			72.16			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0509	451.8	1.762	0.0495	452.5	1.763	0.0008	282.4	1.267	0.0008	282.4	1.267	
70	0.0510	452.5	1.764										70
75	0.0521	457.1	1.778	0.0505	456.9	1.776	0.0490	456.7	1.774	0.0476	456.6	1.772	75
80	0.0531	461.8	1.791	0.0515	461.6	1.789	0.0500	461.4	1.787	0.0486	461.3	1.785	80
85	0.0541	466.5	1.804	0.0525	466.4	1.802	0.0510	466.2	1.800	0.0495	466.0	1.798	85
90	0.0551	471.3	1.817	0.0535	471.1	1.815	0.0519	470.9	1.814	0.0505	470.8	1.812	90
95	0.0561	476.1	1.831	0.0545	475.9	1.829	0.0529	475.7	1.827	0.0514	475.6	1.825	95
100	0.0571	480.9	1.844	0.0554	480.7	1.842	0.0538	480.6	1.840	0.0523	480.4	1.838	100
105	0.0581	485.7	1.856	0.0564	485.6	1.854	0.0548	485.4	1.853	0.0533	485.2	1.851	105
110	0.0591	490.6	1.869	0.0574	490.4	1.867	0.0557	490.3	1.865	0.0542	490.1	1.863	110
115	0.0601	495.5	1.882	0.0583	495.3	1.880	0.0567	495.2	1.878	0.0551	495.0	1.876	115
120	0.0610	500.4	1.894	0.0593	500.2	1.893	0.0576	500.1	1.891	0.0560	499.9	1.889	120
125	0.0620	505.3	1.907	0.0602	505.2	1.905	0.0585	505.0	1.903	0.0569	504.9	1.901	125
130	0.0629	510.3	1.919	0.0611	510.2	1.917	0.0594	510.0	1.916	0.0578	509.9	1.914	130
135	0.0639	515.3	1.932	0.0621	515.2	1.930	0.0603	515.0	1.928	0.0587	514.9	1.926	135
140	0.0648	520.3	1.944	0.0630	520.2	1.942	0.0612	520.0	1.940	0.0596	519.9	1.938	140
145	0.0658	525.3	1.956	0.0639	525.2	1.954	0.0621	525.1	1.952	0.0604	525.0	1.950	145
150	0.0667	530.4	1.968	0.0648	530.3	1.966	0.0630	530.2	1.964	0.0613	530.0	1.963	150
155	0.0676	535.5	1.980	0.0657	535.4	1.978	0.0639	535.3	1.976	0.0622	535.1	1.975	155
160	0.0686	540.6	1.992	0.0666	540.5	1.990	0.0648	540.4	1.988	0.0630	540.3	1.986	160
165	0.0695	545.8	2.004	0.0675	545.6	2.002	0.0657	545.5	2.000	0.0639	545.4	1.998	165
170	0.0704	550.9	2.015	0.0684	550.8	2.014	0.0665	550.7	2.012	0.0648	550.6	2.010	170
175	0.0713	556.1	2.027	0.0693	556.0	2.025	0.0674	555.9	2.023	0.0656	555.8	2.022	175
180													180
185													185
190													190
195	0.0750	577.1	2.073	0.0729	577.0	2.071	0.0709	576.9	2.069	0.0690	576.8	2.068	195
200	0.0759	582.4	2.084	0.0737	582.4	2.082	0.0717	582.3	2.081	0.0698	582.2	2.079	200
205	0.0768	587.8	2.095	0.0746	587.7	2.094	0.0726	587.6	2.092	0.0707	587.5	2.090	205
210	0.0777	593.2	2.107	0.0755	593.1	2.105	0.0734	593.0	2.103	0.0715	592.9	2.101	210
215	0.0786	598.5	2.118	0.0764	598.5	2.116	0.0743	598.4	2.114	0.0723	598.3	2.112	215

Opteon™ XP30 (R-514A)
Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	400			425			450			475			Temp °C
	73.10			75.38			77.56			79.65			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0459	454.6	1.765	0.0433	456.2	1.766	0.0008	287.4	1.282	0.0008	287.4	1.282	
75	0.0463	456.4	1.770										75
80	0.0472	461.1	1.783	0.0441	460.6	1.779	0.0413	460.1	1.774	0.0388	459.6	1.770	80
85	0.0481	465.8	1.797	0.0450	465.3	1.792	0.0422	464.9	1.788	0.0396	464.4	1.783	85
90	0.0491	470.6	1.810	0.0459	470.1	1.805	0.0430	469.7	1.801	0.0405	469.2	1.797	90
95	0.0500	475.4	1.823	0.0467	474.9	1.818	0.0439	474.5	1.814	0.0413	474.1	1.810	95
100	0.0509	480.2	1.836	0.0476	479.8	1.831	0.0447	479.4	1.827	0.0421	478.9	1.823	100
105	0.0518	485.1	1.849	0.0485	484.7	1.844	0.0455	484.2	1.840	0.0429	483.8	1.836	105
110	0.0527	490.0	1.862	0.0493	489.6	1.857	0.0463	489.2	1.853	0.0436	488.7	1.849	110
115	0.0536	494.9	1.874	0.0502	494.5	1.870	0.0471	494.1	1.866	0.0444	493.7	1.862	115
120	0.0545	499.8	1.887	0.0510	499.4	1.883	0.0480	499.0	1.879	0.0452	498.7	1.875	120
125	0.0554	504.8	1.900	0.0519	504.4	1.895	0.0488	504.0	1.891	0.0460	503.7	1.887	125
130	0.0562	509.7	1.912	0.0527	509.4	1.908	0.0495	509.0	1.904	0.0467	508.7	1.900	130
135	0.0571	514.7	1.924	0.0535	514.4	1.920	0.0503	514.1	1.916	0.0475	513.7	1.912	135
140	0.0580	519.8	1.937	0.0543	519.4	1.932	0.0511	519.1	1.928	0.0482	518.8	1.925	140
145	0.0588	524.8	1.949	0.0552	524.5	1.945	0.0519	524.2	1.941	0.0490	523.9	1.937	145
150	0.0597	529.9	1.961	0.0560	529.6	1.957	0.0527	529.3	1.953	0.0497	529.0	1.949	150
155	0.0605	535.0	1.973	0.0568	534.7	1.969	0.0534	534.4	1.965	0.0504	534.1	1.961	155
160	0.0614	540.2	1.985	0.0576	539.9	1.981	0.0542	539.6	1.977	0.0512	539.3	1.973	160
165	0.0622	545.3	1.997	0.0584	545.0	1.992	0.0550	544.7	1.989	0.0519	544.4	1.985	165
170	0.0631	550.5	2.008	0.0592	550.2	2.004	0.0557	549.9	2.000	0.0526	549.7	1.997	170
175	0.0639	555.7	2.020	0.0600	555.4	2.016	0.0565	555.2	2.012	0.0533	554.9	2.008	175
180													180
185													185
190													190
195	0.0672	576.8	2.066	0.0631	576.5	2.062	0.0594	576.3	2.058	0.0562	576.0	2.055	195
200	0.0680	582.1	2.077	0.0639	581.8	2.073	0.0602	581.6	2.070	0.0569	581.4	2.066	200
205	0.0688	587.4	2.089	0.0646	587.2	2.085	0.0609	587.0	2.081	0.0576	586.7	2.077	205
210	0.0697	592.8	2.100	0.0654	592.6	2.096	0.0617	592.4	2.092	0.0583	592.1	2.088	210
215	0.0705	598.2	2.111	0.0662	598.0	2.107	0.0624	597.8	2.103	0.0590	597.5	2.100	215
220	0.0713	603.6	2.122	0.0670	603.4	2.118	0.0631	603.2	2.114	0.0597	603.0	2.111	220

Opteon™ XP30 (R-514A)
Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	500			525			550			575			Temp °C
	81.66			83.59			85.45			87.25			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0368	460.7	1.770	0.0351	462.1	1.772	0.0009	298.6	1.313	0.0009	298.6	1.313	
85	0.0374	463.9	1.779	0.0353	463.5	1.776							85
90	0.0382	468.8	1.793	0.0361	468.3	1.789	0.0342	467.8	1.785	0.0324	467.4	1.782	90
95	0.0389	473.6	1.806	0.0368	473.2	1.802	0.0349	472.7	1.799	0.0331	472.2	1.795	95
100	0.0397	478.5	1.819	0.0376	478.1	1.816	0.0356	477.6	1.812	0.0338	477.2	1.808	100
105	0.0405	483.4	1.832	0.0383	483.0	1.829	0.0363	482.5	1.825	0.0345	482.1	1.822	105
110	0.0412	488.3	1.845	0.0390	487.9	1.842	0.0370	487.5	1.838	0.0352	487.1	1.835	110
115	0.0420	493.3	1.858	0.0397	492.9	1.855	0.0377	492.5	1.851	0.0359	492.1	1.848	115
120	0.0427	498.3	1.871	0.0405	497.9	1.867	0.0384	497.5	1.864	0.0365	497.1	1.860	120
125	0.0434	503.3	1.884	0.0412	502.9	1.880	0.0391	502.5	1.877	0.0372	502.2	1.873	125
130	0.0442	508.3	1.896	0.0419	508.0	1.893	0.0398	507.6	1.889	0.0379	507.2	1.886	130
135	0.0449	513.4	1.909	0.0426	513.0	1.905	0.0405	512.7	1.902	0.0385	512.3	1.898	135
140	0.0456	518.4	1.921	0.0433	518.1	1.917	0.0411	517.8	1.914	0.0392	517.4	1.911	140
145	0.0463	523.5	1.933	0.0440	523.2	1.930	0.0418	522.9	1.926	0.0398	522.5	1.923	145
150	0.0470	528.7	1.945	0.0446	528.3	1.942	0.0424	528.0	1.939	0.0404	527.7	1.935	150
155	0.0477	533.8	1.957	0.0453	533.5	1.954	0.0431	533.2	1.951	0.0411	532.9	1.948	155
160	0.0484	539.0	1.969	0.0460	538.7	1.966	0.0437	538.4	1.963	0.0417	538.1	1.960	160
165	0.0491	544.2	1.981	0.0466	543.9	1.978	0.0444	543.6	1.975	0.0423	543.3	1.972	165
170	0.0498	549.4	1.993	0.0473	549.1	1.990	0.0450	548.8	1.987	0.0429	548.5	1.983	170
175	0.0505	554.6	2.005	0.0480	554.3	2.002	0.0457	554.1	1.998	0.0435	553.8	1.995	175
180													180
185													185
190													190
195	0.0532	575.8	2.051	0.0506	575.5	2.048	0.0482	575.3	2.045	0.0459	575.0	2.042	195
200	0.0539	581.1	2.063	0.0512	580.9	2.059	0.0488	580.7	2.056	0.0465	580.4	2.053	200
205	0.0546	586.5	2.074	0.0519	586.3	2.071	0.0494	586.0	2.067	0.0471	585.8	2.064	205
210	0.0552	591.9	2.085	0.0525	591.7	2.082	0.0500	591.4	2.079	0.0477	591.2	2.076	210
215	0.0559	597.3	2.096	0.0531	597.1	2.093	0.0506	596.9	2.090	0.0483	596.7	2.087	215
220	0.0566	602.8	2.107	0.0538	602.5	2.104	0.0512	602.3	2.101	0.0489	602.1	2.098	220
225	0.0572	608.2	2.118	0.0544	608.0	2.115	0.0518	607.8	2.112	0.0495	607.6	2.109	225
230	0.0579	613.7	2.129	0.0550	613.5	2.126	0.0524	613.3	2.123	0.0501	613.1	2.120	230

Opteon™ XP30 (R-514A)
Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	600			625			650			675			Temp °C
	89.00			90.68			92.32			93.91			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0307	465.9	1.776	0.0295	467.1	1.777	0.0009	308.5	1.341	0.0009	308.4	1.341	
90	0.0308	466.9	1.778										90
95	0.0315	471.8	1.792	0.0300	471.3	1.788	0.0287	470.8	1.785	0.0274	470.4	1.782	95
100	0.0322	476.7	1.805	0.0307	476.3	1.802	0.0293	475.8	1.798	0.0280	475.3	1.795	100
105	0.0329	481.7	1.818	0.0313	481.2	1.815	0.0299	480.8	1.812	0.0286	480.3	1.809	105
110	0.0335	486.7	1.831	0.0320	486.2	1.828	0.0306	485.8	1.825	0.0292	485.4	1.822	110
115	0.0342	491.7	1.844	0.0326	491.3	1.841	0.0312	490.9	1.838	0.0298	490.4	1.835	115
120	0.0348	496.7	1.857	0.0333	496.3	1.854	0.0318	495.9	1.851	0.0304	495.5	1.848	120
125	0.0355	501.8	1.870	0.0339	501.4	1.867	0.0324	501.0	1.864	0.0310	500.6	1.861	125
130	0.0361	506.9	1.883	0.0345	506.5	1.879	0.0330	506.1	1.876	0.0316	505.7	1.874	130
135	0.0367	511.9	1.895	0.0351	511.6	1.892	0.0336	511.2	1.889	0.0322	510.9	1.886	135
140	0.0374	517.1	1.908	0.0357	516.7	1.905	0.0342	516.4	1.902	0.0328	516.0	1.899	140
145	0.0380	522.2	1.920	0.0363	521.9	1.917	0.0348	521.5	1.914	0.0333	521.2	1.911	145
150	0.0386	527.4	1.932	0.0369	527.0	1.929	0.0353	526.7	1.926	0.0339	526.4	1.924	150
155	0.0392	532.6	1.944	0.0375	532.2	1.941	0.0359	531.9	1.939	0.0344	531.6	1.936	155
160	0.0398	537.8	1.957	0.0381	537.5	1.954	0.0365	537.1	1.951	0.0350	536.8	1.948	160
165	0.0404	543.0	1.969	0.0387	542.7	1.966	0.0370	542.4	1.963	0.0355	542.1	1.960	165
170	0.0410	548.2	1.980	0.0392	547.9	1.978	0.0376	547.7	1.975	0.0361	547.4	1.972	170
175	0.0416	553.5	1.992	0.0398	553.2	1.989	0.0382	552.9	1.987	0.0366	552.7	1.984	175
180													180
185													185
190													190
195	0.0439	574.8	2.039	0.0421	574.5	2.036	0.0403	574.3	2.033	0.0387	574.0	2.031	195
200	0.0445	580.2	2.050	0.0426	579.9	2.047	0.0409	579.7	2.045	0.0393	579.4	2.042	200
205	0.0451	585.6	2.062	0.0432	585.3	2.059	0.0414	585.1	2.056	0.0398	584.9	2.053	205
210	0.0456	591.0	2.073	0.0437	590.8	2.070	0.0419	590.5	2.067	0.0403	590.3	2.065	210
215	0.0462	596.4	2.084	0.0443	596.2	2.081	0.0425	596.0	2.079	0.0408	595.8	2.076	215
220	0.0468	601.9	2.095	0.0448	601.7	2.092	0.0430	601.5	2.090	0.0413	601.2	2.087	220
225	0.0473	607.4	2.106	0.0453	607.2	2.103	0.0435	607.0	2.101	0.0418	606.7	2.098	225
230	0.0479	612.9	2.117	0.0459	612.7	2.114	0.0440	612.5	2.112	0.0423	612.3	2.109	230
235	0.0484	618.4	2.128	0.0464	618.2	2.125	0.0446	618.0	2.123	0.0428	617.8	2.120	235

Opteon™ XP30 (R-514A)
Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	700			725			750			775			Temp °C
	95.46			96.96			98.43			99.86			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0262	470.4	1.780	0.0253	471.4	1.781	0.0009	317.3	1.364	0.0009	317.3	1.364	
100	0.0268	474.9	1.792	0.0257	474.4	1.789	0.0246	473.9	1.786	0.0236	473.5	1.783	100
105	0.0274	479.9	1.805	0.0263	479.4	1.803	0.0252	479.0	1.800	0.0242	478.5	1.797	105
110	0.0280	484.9	1.819	0.0269	484.5	1.816	0.0258	484.1	1.813	0.0248	483.6	1.810	110
115	0.0286	490.0	1.832	0.0274	489.6	1.829	0.0264	489.1	1.826	0.0253	488.7	1.823	115
120	0.0292	495.1	1.845	0.0280	494.7	1.842	0.0269	494.3	1.839	0.0259	493.8	1.836	120
125	0.0298	500.2	1.858	0.0286	499.8	1.855	0.0275	499.4	1.852	0.0264	499.0	1.850	125
130	0.0303	505.3	1.871	0.0291	505.0	1.868	0.0280	504.6	1.865	0.0270	504.2	1.862	130
135	0.0309	510.5	1.883	0.0297	510.1	1.881	0.0285	509.7	1.878	0.0275	509.4	1.875	135
140	0.0314	515.7	1.896	0.0302	515.3	1.893	0.0291	514.9	1.891	0.0280	514.6	1.888	140
145	0.0320	520.8	1.908	0.0308	520.5	1.906	0.0296	520.1	1.903	0.0285	519.8	1.900	145
150	0.0325	526.0	1.921	0.0313	525.7	1.918	0.0301	525.4	1.915	0.0290	525.0	1.913	150
155	0.0331	531.3	1.933	0.0318	530.9	1.930	0.0306	530.6	1.928	0.0295	530.3	1.925	155
160	0.0336	536.5	1.945	0.0323	536.2	1.943	0.0311	535.9	1.940	0.0300	535.6	1.938	160
165	0.0342	541.8	1.957	0.0329	541.5	1.955	0.0317	541.2	1.952	0.0305	540.9	1.950	165
170	0.0347	547.1	1.969	0.0334	546.8	1.967	0.0321	546.5	1.964	0.0310	546.2	1.962	170
175	0.0352	552.4	1.981	0.0339	552.1	1.979	0.0326	551.8	1.976	0.0315	551.5	1.974	175
180													180
185													185
190													190
195	0.0373	573.8	2.028	0.0359	573.5	2.025	0.0346	573.3	2.023	0.0334	573.0	2.021	195
200	0.0378	579.2	2.039	0.0364	578.9	2.037	0.0351	578.7	2.035	0.0338	578.4	2.032	200
205	0.0383	584.6	2.051	0.0369	584.4	2.048	0.0355	584.1	2.046	0.0343	583.9	2.044	205
210	0.0388	590.1	2.062	0.0373	589.8	2.060	0.0360	589.6	2.057	0.0348	589.4	2.055	210
215	0.0393	595.5	2.073	0.0378	595.3	2.071	0.0365	595.1	2.069	0.0352	594.8	2.066	215
220	0.0398	601.0	2.085	0.0383	600.8	2.082	0.0369	600.6	2.080	0.0357	600.3	2.078	220
225	0.0402	606.5	2.096	0.0388	606.3	2.093	0.0374	606.1	2.091	0.0361	605.9	2.089	225
230	0.0407	612.1	2.107	0.0393	611.8	2.104	0.0379	611.6	2.102	0.0366	611.4	2.100	230
235	0.0412	617.6	2.118	0.0397	617.4	2.115	0.0383	617.2	2.113	0.0370	617.0	2.111	235
240	0.0417	623.2	2.129	0.0402	623.0	2.126	0.0388	622.8	2.124	0.0375	622.6	2.122	240
245	0.0422	628.8	2.139	0.0407	628.6	2.137	0.0392	628.4	2.135	0.0379	628.2	2.133	245

Opteon™ XP30 (R-514A)
Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	800			900			1000			1100			Temp °C
	101.26			106.53			111.38			115.87			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0229	474.2	1.784	0.0202	477.7	1.787	0.0009	325.3	1.385	0.0009	325.2	1.385	
105	0.0233	478.0	1.794										105
110	0.0238	483.1	1.807	0.0206	481.3	1.797							110
115	0.0244	488.3	1.821	0.0211	486.5	1.810	0.0184	484.6	1.800				115
120	0.0249	493.4	1.834	0.0216	491.7	1.823	0.0189	489.9	1.814	0.0166	487.9	1.804	120
125	0.0254	498.6	1.847	0.0221	496.9	1.837	0.0193	495.2	1.827	0.0171	493.3	1.818	125
130	0.0260	503.8	1.860	0.0226	502.2	1.850	0.0198	500.5	1.840	0.0175	498.7	1.831	130
135	0.0265	509.0	1.873	0.0230	507.4	1.863	0.0203	505.8	1.853	0.0180	504.1	1.845	135
140	0.0270	514.2	1.885	0.0235	512.7	1.876	0.0207	511.1	1.866	0.0184	509.5	1.858	140
145	0.0275	519.4	1.898	0.0240	518.0	1.888	0.0212	516.5	1.879	0.0188	514.9	1.871	145
150	0.0280	524.7	1.910	0.0244	523.3	1.901	0.0216	521.8	1.892	0.0192	520.3	1.884	150
155	0.0285	530.0	1.923	0.0249	528.6	1.913	0.0220	527.2	1.905	0.0196	525.8	1.896	155
160	0.0290	535.2	1.935	0.0253	533.9	1.926	0.0224	532.6	1.917	0.0200	531.2	1.909	160
165	0.0295	540.5	1.947	0.0258	539.3	1.938	0.0228	538.0	1.930	0.0204	536.6	1.922	165
170	0.0299	545.9	1.959	0.0262	544.6	1.950	0.0233	543.4	1.942	0.0208	542.1	1.934	170
175	0.0304	551.2	1.971	0.0267	550.0	1.962	0.0237	548.8	1.954	0.0212	547.6	1.946	175
180													180
185													185
190													190
195	0.0323	572.8	2.018	0.0284	571.7	2.010	0.0252	570.6	2.002	0.0227	569.5	1.994	195
200	0.0327	578.2	2.030	0.0288	577.2	2.021	0.0256	576.1	2.013	0.0230	575.1	2.006	200
205	0.0332	583.6	2.041	0.0292	582.7	2.033	0.0260	581.6	2.025	0.0234	580.6	2.018	205
210	0.0336	589.1	2.053	0.0296	588.2	2.044	0.0264	587.2	2.036	0.0237	586.2	2.029	210
215	0.0341	594.6	2.064	0.0300	593.7	2.056	0.0267	592.7	2.048	0.0241	591.8	2.041	215
220	0.0345	600.1	2.075	0.0304	599.2	2.067	0.0271	598.3	2.059	0.0244	597.4	2.052	220
225	0.0349	605.7	2.086	0.0308	604.8	2.078	0.0275	603.9	2.070	0.0248	603.0	2.063	225
230	0.0354	611.2	2.098	0.0312	610.3	2.089	0.0278	609.5	2.082	0.0251	608.6	2.075	230
235	0.0358	616.8	2.109	0.0316	615.9	2.100	0.0282	615.1	2.093	0.0254	614.2	2.086	235
240	0.0362	622.4	2.120	0.0320	621.5	2.111	0.0286	620.7	2.104	0.0258	619.9	2.097	240
245	0.0367	628.0	2.130	0.0324	627.2	2.122	0.0289	626.4	2.115	0.0261	625.6	2.108	245
250	0.0371	633.6	2.141	0.0328	632.8	2.133	0.0293	632.0	2.126	0.0264	631.2	2.119	250

Opteon™ XP30 (R-514A)
Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	1200			1300			1400			1500			Temp °C
	120.07			124.01			127.72			131.24			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0148	486.0	1.795	0.0135	488.2	1.798	0.0010	352.6	1.456	0.0010	352.5	1.455	
125	0.0152	491.4	1.809	0.0136	489.3	1.800							125
130	0.0156	496.9	1.823	0.0140	494.9	1.814	0.0126	492.8	1.806				130
135	0.0161	502.3	1.836	0.0144	500.5	1.828	0.0130	498.5	1.820	0.0117	496.4	1.812	135
140	0.0165	507.8	1.849	0.0148	506.0	1.841	0.0134	504.2	1.833	0.0121	502.2	1.826	140
145	0.0169	513.3	1.863	0.0152	511.6	1.855	0.0138	509.8	1.847	0.0125	507.9	1.839	145
150	0.0173	518.8	1.876	0.0156	517.1	1.868	0.0141	515.5	1.860	0.0129	513.7	1.853	150
155	0.0177	524.3	1.889	0.0160	522.7	1.881	0.0145	521.1	1.874	0.0132	519.4	1.867	155
160	0.0180	529.8	1.901	0.0163	528.3	1.894	0.0149	526.7	1.887	0.0136	525.1	1.880	160
165	0.0184	535.3	1.914	0.0167	533.8	1.907	0.0152	532.3	1.900	0.0139	530.8	1.893	165
170	0.0188	540.8	1.926	0.0170	539.4	1.919	0.0155	538.0	1.912	0.0142	536.5	1.906	170
175	0.0191	546.3	1.939	0.0174	545.0	1.932	0.0159	543.6	1.925	0.0146	542.2	1.919	175
180													180
185													185
190													190
195	0.0205	568.4	1.987	0.0187	567.3	1.981	0.0172	566.1	1.974	0.0158	564.9	1.968	195
200	0.0209	574.0	1.999	0.0190	572.9	1.993	0.0175	571.8	1.986	0.0161	570.6	1.980	200
205	0.0212	579.6	2.011	0.0194	578.5	2.004	0.0178	577.4	1.998	0.0164	576.3	1.992	205
210	0.0215	585.2	2.022	0.0197	584.1	2.016	0.0181	583.1	2.010	0.0167	582.0	2.004	210
215	0.0219	590.8	2.034	0.0200	589.8	2.028	0.0184	588.8	2.022	0.0170	587.7	2.016	215
220	0.0222	596.4	2.045	0.0203	595.4	2.039	0.0187	594.4	2.033	0.0172	593.4	2.028	220
225	0.0225	602.0	2.057	0.0206	601.1	2.051	0.0189	600.1	2.045	0.0175	599.2	2.039	225
230	0.0228	607.7	2.068	0.0209	606.8	2.062	0.0192	605.8	2.056	0.0178	604.9	2.051	230
235	0.0231	613.3	2.079	0.0212	612.5	2.073	0.0195	611.6	2.067	0.0181	610.6	2.062	235
240	0.0235	619.0	2.090	0.0215	618.2	2.084	0.0198	617.3	2.079	0.0183	616.4	2.073	240
245	0.0238	624.7	2.101	0.0218	623.9	2.095	0.0201	623.0	2.090	0.0186	622.2	2.084	245
250	0.0241	630.4	2.112	0.0221	629.6	2.106	0.0203	628.8	2.101	0.0189	628.0	2.096	250
255	0.0244	636.2	2.123	0.0224	635.4	2.117	0.0206	634.6	2.112	0.0191	633.8	2.107	255
260	0.0247	641.9	2.134	0.0226	641.1	2.128	0.0209	640.4	2.123	0.0194	639.6	2.117	260
265	0.0250	647.7	2.145	0.0229	646.9	2.139	0.0212	646.2	2.134	0.0196	645.4	2.128	265
270	0.0253	653.5	2.156	0.0232	652.7	2.150	0.0214	652.0	2.144	0.0199	651.2	2.139	270

Opteon™ XP30 (R-514A)
Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	1600			1700			1800			2000			Temp °C
	134.58			137.77			140.82			146.53			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0105	493.7	1.802	0.0097	495.1	1.803	0.0011	375.3	1.511	0.0011	375.0	1.510	
135	0.0106	494.2	1.803										135
140	0.0110	500.1	1.818	0.0099	497.8	1.810							140
145	0.0113	506.0	1.832	0.0103	503.9	1.824	0.0094	501.6	1.816				145
150	0.0117	511.8	1.846	0.0107	509.8	1.838	0.0098	507.7	1.831	0.0081	503.0	1.816	150
155	0.0121	517.6	1.859	0.0111	515.8	1.852	0.0101	513.8	1.845	0.0085	509.4	1.831	155
160	0.0124	523.4	1.873	0.0114	521.7	1.866	0.0105	519.8	1.859	0.0089	515.8	1.846	160
165	0.0128	529.2	1.886	0.0117	527.6	1.880	0.0108	525.8	1.873	0.0092	522.0	1.860	165
170	0.0131	535.0	1.899	0.0121	533.4	1.893	0.0111	531.8	1.887	0.0096	528.2	1.874	170
175	0.0134	540.7	1.912	0.0124	539.2	1.906	0.0115	537.7	1.900	0.0099	534.3	1.888	175
180													180
185													185
190													190
195	0.0146	563.7	1.962	0.0136	562.4	1.957	0.0126	561.1	1.951	0.0110	558.4	1.940	195
200	0.0149	569.4	1.975	0.0138	568.2	1.969	0.0129	567.0	1.963	0.0113	564.4	1.953	200
205	0.0152	575.2	1.987	0.0141	574.0	1.981	0.0132	572.8	1.976	0.0115	570.3	1.965	205
210	0.0155	580.9	1.999	0.0144	579.8	1.993	0.0134	578.6	1.988	0.0118	576.3	1.978	210
215	0.0157	586.7	2.010	0.0146	585.6	2.005	0.0137	584.5	2.000	0.0120	582.2	1.990	215
220	0.0160	592.4	2.022	0.0149	591.4	2.017	0.0139	590.3	2.012	0.0123	588.1	2.002	220
225	0.0163	598.2	2.034	0.0152	597.2	2.029	0.0142	596.1	2.024	0.0125	594.0	2.014	225
230	0.0165	603.9	2.045	0.0154	603.0	2.040	0.0144	602.0	2.035	0.0127	599.9	2.026	230
235	0.0168	609.7	2.057	0.0157	608.8	2.052	0.0147	607.8	2.047	0.0129	605.9	2.037	235
240	0.0170	615.5	2.068	0.0159	614.6	2.063	0.0149	613.7	2.058	0.0132	611.8	2.049	240
245	0.0173	621.3	2.079	0.0161	620.4	2.074	0.0151	619.5	2.070	0.0134	617.7	2.061	245
250	0.0175	627.1	2.090	0.0164	626.3	2.086	0.0154	625.4	2.081	0.0136	623.6	2.072	250
255	0.0178	632.9	2.101	0.0166	632.1	2.097	0.0156	631.3	2.092	0.0138	629.5	2.083	255
260	0.0180	638.8	2.112	0.0169	638.0	2.108	0.0158	637.1	2.103	0.0140	635.5	2.094	260
265	0.0183	644.6	2.123	0.0171	643.8	2.119	0.0160	643.0	2.114	0.0142	641.4	2.105	265
270	0.0185	650.5	2.134	0.0173	649.7	2.130	0.0163	648.9	2.125	0.0144	647.4	2.116	270
275	0.0188	656.4	2.145	0.0176	655.6	2.140	0.0165	654.9	2.136	0.0147	653.3	2.127	275
280	0.0190	662.2	2.156	0.0178	661.5	2.151	0.0167	660.8	2.147	0.0149	659.3	2.138	280

Opteon™ XP30 (R-514A)
Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	2100			2200			2300			2400			Temp °C
	149.22			151.80			154.29			156.69			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0073	499.2	1.805	0.0068	499.8	1.805	0.0012	400.4	1.570	0.0012	400.0	1.569	
150	0.0074	500.2	1.807										150
155	0.0078	507.0	1.823	0.0071	504.3	1.815	0.0064	501.2	1.806				155
160	0.0082	513.6	1.838	0.0075	511.1	1.831	0.0069	508.5	1.823	0.0063	505.5	1.815	160
165	0.0085	520.0	1.853	0.0079	517.8	1.846	0.0073	515.4	1.839	0.0067	512.8	1.832	165
170	0.0089	526.3	1.868	0.0082	524.3	1.861	0.0076	522.1	1.854	0.0070	519.8	1.848	170
175	0.0092	532.6	1.882	0.0085	530.7	1.875	0.0079	528.7	1.869	0.0074	526.6	1.863	175
180													180
185													185
190													190
195	0.0103	557.0	1.935	0.0097	555.6	1.930	0.0091	554.1	1.925	0.0085	552.5	1.919	195
200	0.0106	563.1	1.948	0.0099	561.7	1.943	0.0093	560.2	1.938	0.0088	558.8	1.933	200
205	0.0108	569.1	1.960	0.0102	567.7	1.955	0.0096	566.4	1.951	0.0090	565.0	1.946	205
210	0.0111	575.1	1.973	0.0104	573.8	1.968	0.0098	572.5	1.963	0.0093	571.2	1.959	210
215	0.0113	581.0	1.985	0.0106	579.8	1.980	0.0100	578.6	1.976	0.0095	577.3	1.971	215
220	0.0115	587.0	1.997	0.0109	585.8	1.993	0.0103	584.7	1.988	0.0097	583.5	1.984	220
225	0.0118	593.0	2.009	0.0111	591.8	2.005	0.0105	590.7	2.000	0.0099	589.6	1.996	225
230	0.0120	598.9	2.021	0.0113	597.8	2.017	0.0107	596.8	2.012	0.0102	595.7	2.008	230
235	0.0122	604.9	2.033	0.0115	603.8	2.029	0.0109	602.8	2.024	0.0104	601.7	2.020	235
240	0.0124	610.8	2.045	0.0118	609.8	2.040	0.0111	608.8	2.036	0.0106	607.8	2.032	240
245	0.0126	616.8	2.056	0.0120	615.8	2.052	0.0113	614.8	2.048	0.0108	613.9	2.044	245
250	0.0129	622.7	2.068	0.0122	621.8	2.064	0.0115	620.9	2.059	0.0110	619.9	2.056	250
255	0.0131	628.7	2.079	0.0124	627.8	2.075	0.0117	626.9	2.071	0.0112	626.0	2.067	255
260	0.0133	634.6	2.090	0.0126	633.8	2.086	0.0119	632.9	2.082	0.0114	632.0	2.078	260
265	0.0135	640.6	2.101	0.0128	639.8	2.097	0.0121	638.9	2.094	0.0115	638.1	2.090	265
270	0.0137	646.6	2.112	0.0130	645.8	2.108	0.0123	644.9	2.105	0.0117	644.1	2.101	270
275	0.0139	652.6	2.123	0.0132	651.8	2.119	0.0125	651.0	2.116	0.0119	650.2	2.112	275
280	0.0141	658.5	2.134	0.0133	657.8	2.130	0.0127	657.0	2.127	0.0121	656.2	2.123	280
285	0.0143	664.5	2.145	0.0135	663.8	2.141	0.0129	663.1	2.138	0.0123	662.3	2.134	285
290	0.0145	670.6	2.156	0.0137	669.8	2.152	0.0131	669.1	2.148	0.0124	668.4	2.145	290
295	0.0146	676.6	2.166	0.0139	675.9	2.163	0.0132	675.2	2.159	0.0126	674.5	2.156	295

Opteon™ XP30 (R-514A)
Superheated Vapor - Constant Pressure Tables

V = volume in m³/kg

H = enthalpy in kJ/kg

S = entropy in kJ/kg-K

Saturation Properties in Light Green

ABSOLUTE PRESSURE, kPa													
Temp °C	2500			3000			3500			4000			Temp °C
	159.00			169.34			177.79			75.28			
	V	H	S	V	H	S	V	H	S	V	H	S	
	0.0055	500.4	1.802	0.0038	496.8	1.788	0.0012	414.5	1.600	0.0012	412.6	1.594	
160	0.0056	502.1	1.806							0.0012	414.5	1.599	160
165	0.0061	509.9	1.824							0.0013	424.0	1.620	165
170	0.0065	517.3	1.840	0.0039	498.6	1.792				0.0013	434.3	1.644	170
175	0.0068	524.4	1.856	0.0045	509.5	1.817				0.0014	445.7	1.669	175
180													180
185													185
190													190
195	0.0080	550.9	1.914	0.0059	541.6	1.887	0.0043	529.9	1.856	0.0031	515.1	1.821	195
200	0.0083	557.2	1.928	0.0062	548.7	1.902	0.0046	538.3	1.874	0.0034	525.6	1.843	200
205	0.0085	563.6	1.941	0.0065	555.6	1.917	0.0049	546.2	1.891	0.0037	535.0	1.863	205
210	0.0088	569.8	1.954	0.0067	562.4	1.931	0.0052	553.7	1.907	0.0040	543.7	1.881	210
215	0.0090	576.0	1.967	0.0069	569.1	1.944	0.0054	561.1	1.922	0.0043	551.9	1.898	215
220	0.0092	582.2	1.979	0.0071	575.6	1.958	0.0056	568.2	1.936	0.0045	559.8	1.914	220
225	0.0094	588.4	1.992	0.0074	582.1	1.971	0.0058	575.2	1.950	0.0047	567.4	1.929	225
230	0.0096	594.5	2.004	0.0076	588.6	1.984	0.0060	582.0	1.964	0.0049	574.8	1.944	230
235	0.0098	600.7	2.016	0.0078	595.0	1.996	0.0062	588.8	1.977	0.0051	582.0	1.958	235
240	0.0100	606.8	2.028	0.0079	601.3	2.009	0.0064	595.5	1.990	0.0053	589.1	1.972	240
245	0.0102	612.9	2.040	0.0081	607.7	2.021	0.0066	602.1	2.003	0.0055	596.1	1.986	245
250	0.0104	619.0	2.052	0.0083	614.0	2.033	0.0068	608.6	2.016	0.0056	602.9	1.999	250
255	0.0106	625.0	2.063	0.0085	620.3	2.045	0.0069	615.1	2.028	0.0058	609.7	2.012	255
260	0.0108	631.1	2.075	0.0087	626.5	2.057	0.0071	621.6	2.040	0.0059	616.5	2.025	260
265	0.0110	637.2	2.086	0.0088	632.8	2.069	0.0073	628.1	2.052	0.0061	623.1	2.037	265
270	0.0112	643.3	2.097	0.0090	639.0	2.080	0.0074	634.5	2.064	0.0062	629.8	2.049	270
275	0.0114	649.4	2.108	0.0092	645.2	2.092	0.0076	640.9	2.076	0.0064	636.3	2.061	275
280	0.0115	655.5	2.119	0.0093	651.4	2.103	0.0077	647.3	2.088	0.0065	642.9	2.073	280
285	0.0117	661.6	2.130	0.0095	657.7	2.114	0.0079	653.6	2.099	0.0067	649.4	2.085	285
290	0.0119	667.6	2.141	0.0096	663.9	2.125	0.0080	660.0	2.110	0.0068	655.9	2.097	290
295	0.0121	673.7	2.152	0.0098	670.1	2.136	0.0082	666.3	2.122	0.0069	662.4	2.108	295
300	0.0122	679.9	2.163	0.0099	676.3	2.147	0.0083	672.6	2.133	0.0071	668.9	2.119	300
305	0.0124	686.0	2.173	0.0101	682.5	2.158	0.0084	679.0	2.144	0.0072	675.3	2.131	305

For more information on the Opteon™ family of refrigerants, or other refrigerants products, visit opteon.com or call (800) 235-7882.

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