

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P331775-830

Luminaire Tested: **S122RDIW-S290D970U830-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331775-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122RDIW-S290D970U830-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 970 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4623.7 lumens  
Efficiency: N/A  
Efficacy: 121.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

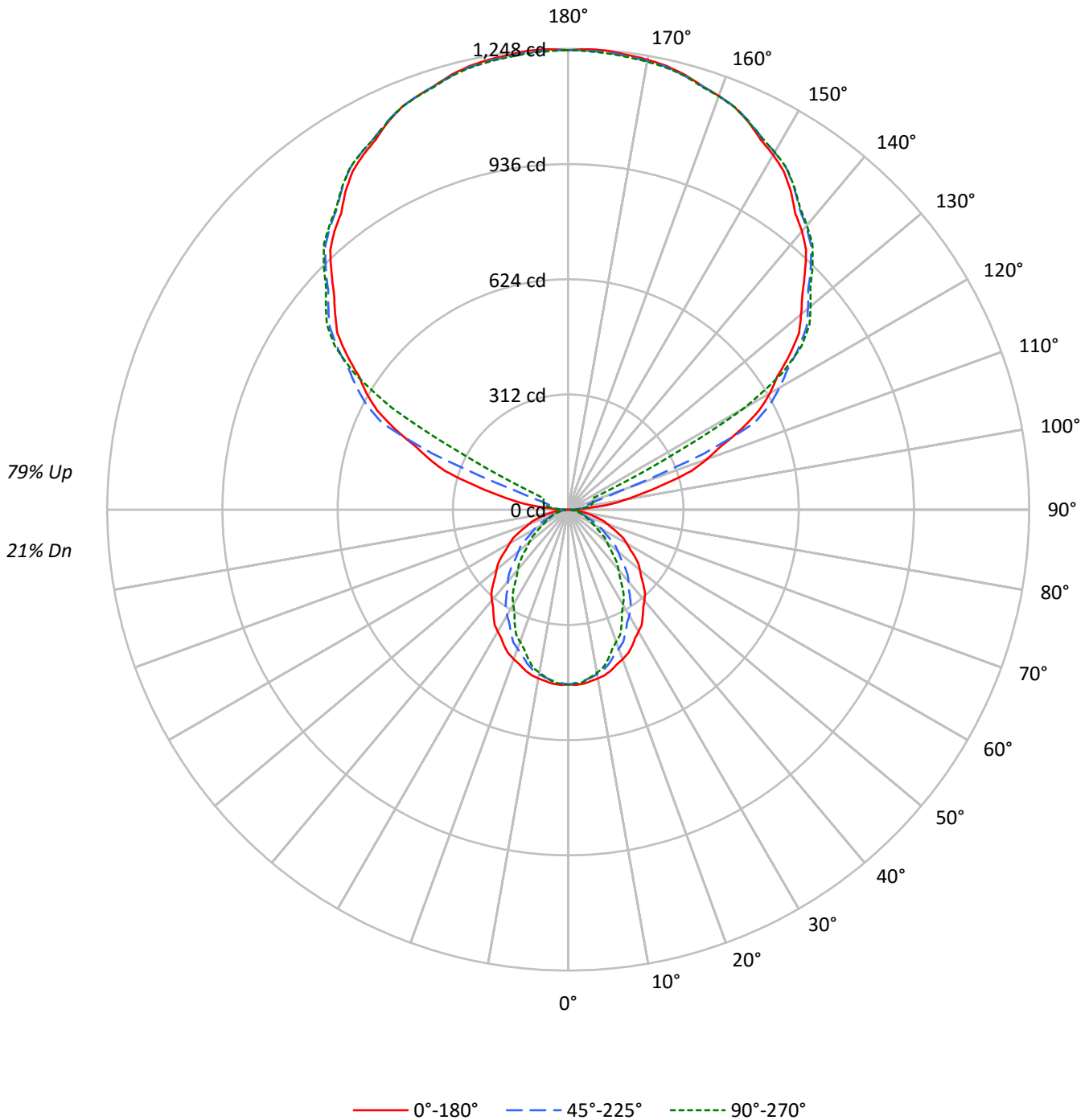
Input Watts (W): 38  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	100	100	100	100	89	89	89	89	67	67	67	48	48	48	30	30	30
1	92	87	84	81	81	78	75	72	59	57	55	42	41	40	26	26	25
2	83	77	71	66	74	68	63	59	52	49	46	37	35	34	23	22	22
3	76	67	61	55	67	60	54	50	46	42	39	33	31	29	21	20	19
4	70	60	52	47	61	53	47	42	41	37	33	29	27	25	19	17	16
5	64	53	45	40	56	47	41	36	36	32	29	26	24	21	17	15	14
6	59	47	40	34	52	42	36	31	33	28	25	24	21	19	15	14	12
7	54	43	35	30	48	38	32	27	30	25	22	22	19	16	14	12	11
8	50	39	31	26	44	35	28	24	27	22	19	20	17	15	13	11	10
9	47	35	28	23	41	32	25	21	25	20	17	18	15	13	12	10	9
10	43	32	25	21	39	29	23	19	23	18	15	17	14	12	11	9	8

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	7640	7640	7640
5°	7669	7543	7585
10°	7609	7420	7356
15°	7522	7199	6992
20°	7400	6887	6541
25°	7277	6531	6102
30°	7105	6162	5541
35°	6936	5765	5048
40°	6768	5351	4477
45°	6572	4889	3959
50°	6365	4421	3451
55°	6159	3916	2967
60°	5916	3387	2464
65°	5643	2846	2239
70°	5316	2346	2058
75°	4916	2133	1921
80°	4342	1906	1757
85°	3409	1501	1501



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	44.3	1.0
10°-20°	121.6	2.6
20°-30°	170.8	3.7
30°-40°	186.2	4.0
40°-50°	171.2	3.7
50°-60°	134.5	2.9
60°-70°	87.7	1.9
70°-80°	45.2	1.0
80°-90°	14.8	0.3
90°-100°	41.5	0.9
100°-110°	152.3	3.3
110°-120°	407.0	8.8
120°-130°	671.8	14.5
130°-140°	714.5	15.5
140°-150°	664.1	14.4
150°-160°	533.9	11.5
160°-170°	344.1	7.4
170°-180°	118.4	2.6
0°-30°	336.6	7.3
0°-40°	522.8	11.3
0°-60°	828.5	17.9
0°-90°	976.2	21.1
90°-120°	600.8	13.0
90°-150°	2651.1	57.3
90°-180°	3648.0	78.9
0°-180°	4623.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	473	473	473	473	473	
5°	473	471	465	469	468	45
15°	450	445	431	423	418	127
25°	408	394	367	350	342	188
35°	352	329	292	266	256	220
45°	288	258	214	185	173	222
55°	219	185	139	114	105	195
65°	148	113	74	61	59	146
75°	79	50	34	31	31	83
85°	18	10	8	8	8	22
90°	1	11	18	22	24	4
95°	58	31	35	39	39	72
105°	274	286	55	64	68	293
115°	518	534	556	158	74	510
125°	732	744	761	767	770	653
135°	906	920	929	937	936	700
145°	1051	1051	1066	1071	1067	657
155°	1157	1150	1160	1165	1158	533
165°	1220	1215	1217	1222	1217	344
175°	1247	1242	1243	1248	1240	119
180°	1245	1245	1245	1245	1245	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	473.2	473.2	473.2	473.2	473.2	473.2	473.2	473.2	473.2	473.2	473.2
2.5°	474.9	474.5	474.1	473.7	473.3	472.7	471.8	471.1	470.2	469.4	470.1
5°	473.2	472.7	472.2	471.7	471.3	470.3	469.1	467.9	466.7	465.4	466.3
7.5°	468.3	467.7	467.0	466.5	465.9	464.9	463.4	461.9	460.5	459.1	459.3
10°	464.1	463.4	462.8	462.1	461.5	460.1	458.3	456.4	454.5	452.6	452.3
12.5°	459.0	458.2	457.3	456.6	455.7	454.1	451.7	449.2	446.8	444.3	443.8
15°	450.0	448.9	447.9	446.9	445.8	443.7	440.5	437.2	433.9	430.7	429.0
17.5°	438.9	437.3	435.7	434.1	432.5	429.7	425.6	421.4	417.3	413.1	410.9
20°	430.7	428.9	427.0	425.0	423.1	419.8	415.0	410.3	405.6	400.8	398.4
22.5°	421.9	419.7	417.5	415.5	413.3	409.5	404.2	398.8	393.5	388.1	385.0
25°	408.5	405.4	402.4	399.4	396.3	391.6	385.3	379.1	372.8	366.6	362.6
27.5°	392.4	389.1	385.8	382.5	379.1	373.9	366.8	359.8	352.7	345.6	341.1
30°	381.1	377.5	373.8	370.2	366.6	361.0	353.4	345.8	338.2	330.5	325.7
32.5°	370.1	365.9	361.7	357.4	353.2	347.2	339.5	331.7	324.0	316.1	310.7
35°	351.9	347.1	342.2	337.4	332.5	325.9	317.5	309.2	300.9	292.5	286.4
37.5°	333.8	328.5	323.1	317.8	312.5	305.4	296.4	287.5	278.6	269.7	263.1
40°	321.1	315.5	309.7	304.0	298.3	290.9	281.6	272.4	263.2	253.9	247.1
42.5°	308.1	302.1	296.1	290.1	284.1	276.3	266.7	257.2	247.7	238.2	231.2
45°	287.8	281.3	274.9	268.6	262.2	254.0	244.0	234.0	224.0	214.1	207.4
47.5°	267.9	261.1	254.4	247.6	240.8	232.3	222.0	211.7	201.3	191.1	184.4
50°	253.4	246.8	240.0	233.2	226.5	217.8	207.4	196.9	186.4	176.0	169.4
52.5°	239.4	232.3	225.4	218.3	211.2	202.6	192.3	182.1	171.8	161.6	155.2
55°	218.8	211.4	204.0	196.5	189.1	180.3	169.9	159.7	149.4	139.1	133.5
57.5°	197.7	190.0	182.4	174.8	167.2	158.4	148.5	138.7	128.8	118.9	113.7
60°	183.2	175.7	168.1	160.4	152.8	144.1	134.3	124.5	114.7	104.9	100.0
62.5°	169.2	161.6	154.0	146.4	138.7	130.3	120.9	111.6	102.3	92.9	88.3
65°	147.7	140.0	132.3	124.6	116.9	108.8	100.2	91.6	83.0	74.5	71.3
67.5°	127.0	119.3	111.7	104.1	96.4	88.7	81.0	73.3	65.6	57.9	56.4
70°	112.6	105.2	97.7	90.4	82.9	76.0	69.4	62.8	56.3	49.7	48.7
72.5°	98.9	91.8	84.6	77.6	70.4	64.3	59.0	53.7	48.4	43.2	42.3
75°	78.8	72.1	65.5	58.8	52.1	47.2	43.9	40.7	37.5	34.2	33.6
77.5°	59.0	53.2	47.3	41.5	35.6	32.0	30.3	28.8	27.2	25.7	25.4
80°	46.7	41.8	36.9	32.1	27.2	24.3	23.4	22.4	21.5	20.5	20.2
82.5°	35.3	31.6	27.8	24.0	20.3	18.0	17.3	16.7	16.0	15.5	15.2
85°	18.4	16.4	14.4	12.4	10.5	9.2	9.0	8.7	8.4	8.1	8.1
87.5°	5.7	5.5	5.3	5.2	5.0	5.1	5.4	5.7	6.0	6.3	6.5
90°	0.9	3.1	5.3	7.5	9.7	11.6	13.2	14.8	16.4	18.0	19.0
92.5°	18.2	18.0	17.8	17.6	17.4	17.7	18.5	19.3	20.1	20.9	21.4
95°	58.5	51.9	45.3	38.7	32.1	29.5	30.9	32.3	33.7	35.2	36.1
97.5°	116.2	97.6	79.0	60.3	41.8	34.0	37.3	40.5	43.7	47.0	47.8
100°	159.4	132.0	104.5	77.2	49.8	37.7	41.1	44.5	48.0	51.4	53.0
102.5°	207.0	201.1	195.4	189.5	183.7	166.6	138.2	109.7	81.2	52.8	54.9
105°	273.8	279.8	285.8	291.8	297.8	273.5	218.9	164.2	109.6	55.0	57.1
107.5°	350.0	354.9	359.7	364.5	369.4	339.0	273.5	207.9	142.4	76.9	74.6
110°	399.0	403.2	407.4	411.6	415.8	389.0	331.1	273.3	215.5	157.6	137.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	445.1	448.8	452.5	456.3	460.0	454.7	440.5	426.1	411.8	397.6	324.5
115°	517.8	521.2	524.7	528.1	531.5	535.6	540.6	545.6	550.7	555.7	463.0
117.5°	582.9	586.7	590.5	594.3	598.1	601.7	605.2	608.6	612.1	615.5	593.0
120°	630.5	633.5	636.4	639.4	642.4	645.7	649.3	653.0	656.6	660.2	662.6
122.5°	670.8	673.9	677.1	680.2	683.4	687.0	690.9	694.8	698.7	702.7	704.1
125°	732.2	734.8	737.4	740.0	742.6	745.8	749.6	753.5	757.2	761.0	762.4
127.5°	787.9	790.8	793.6	796.5	799.4	802.3	805.1	807.9	810.8	813.6	815.7
130°	823.2	826.4	829.6	832.7	835.9	838.7	840.8	843.1	845.3	847.5	849.7
132.5°	859.2	862.0	864.7	867.3	870.1	872.5	874.8	876.9	879.1	881.4	883.3
135°	906.1	909.3	912.5	915.7	918.9	921.3	923.1	924.9	926.7	928.6	930.6
137.5°	953.4	955.6	957.9	960.2	962.3	964.5	966.6	968.6	970.6	972.7	974.7
140°	984.4	986.0	987.6	989.2	990.8	992.7	994.9	997.1	999.3	1001.5	1003.3
142.5°	1010.3	1011.7	1013.2	1014.6	1016.1	1018.0	1020.6	1023.1	1025.7	1028.1	1029.8
145°	1051.0	1050.8	1050.7	1050.5	1050.3	1051.9	1055.3	1058.7	1062.1	1065.5	1066.9
147.5°	1086.6	1085.7	1085.0	1084.2	1083.5	1084.8	1088.2	1091.5	1094.9	1098.3	1099.3
150°	1109.6	1108.1	1106.7	1105.4	1104.0	1104.8	1108.1	1111.3	1114.5	1117.7	1118.9
152.5°	1129.1	1127.5	1125.9	1124.4	1122.8	1123.5	1126.5	1129.6	1132.7	1135.7	1136.9
155°	1157.3	1155.5	1153.7	1151.9	1150.1	1150.4	1152.8	1155.2	1157.6	1160.0	1161.2
157.5°	1179.5	1178.0	1176.4	1174.9	1173.4	1173.5	1175.2	1176.9	1178.5	1180.2	1181.6
160°	1192.4	1191.3	1190.1	1188.8	1187.6	1187.6	1188.8	1190.1	1191.3	1192.4	1193.6
162.5°	1204.0	1202.8	1201.6	1200.3	1199.2	1199.1	1200.1	1201.2	1202.2	1203.2	1204.6
165°	1219.5	1218.2	1217.0	1215.9	1214.7	1214.4	1214.9	1215.5	1216.2	1216.7	1218.1
167.5°	1231.0	1229.7	1228.6	1227.4	1226.2	1225.9	1226.4	1227.0	1227.6	1228.1	1229.5
170°	1237.5	1236.2	1235.1	1233.9	1232.7	1232.3	1232.7	1233.0	1233.5	1233.9	1235.3
172.5°	1241.8	1240.6	1239.3	1238.2	1237.0	1236.6	1237.0	1237.4	1237.7	1238.2	1239.6
175°	1247.4	1245.9	1244.5	1243.2	1241.8	1241.2	1241.7	1242.1	1242.5	1242.8	1244.3
177.5°	1248.3	1247.2	1246.0	1244.9	1243.8	1243.3	1243.5	1243.6	1243.8	1244.0	1245.1
180°	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	473.2	473.2	473.2	473.2	473.2	473.2	473.2	473.2
2.5°	470.9	471.6	472.4	472.7	472.6	472.4	472.2	472.1
5°	467.1	468.0	468.8	469.1	468.8	468.5	468.3	468.0
7.5°	459.6	459.9	460.1	460.0	459.5	458.9	458.5	458.0
10°	452.0	451.8	451.5	451.0	450.4	449.9	449.3	448.7
12.5°	443.4	442.8	442.3	441.6	440.6	439.7	438.8	437.8
15°	427.2	425.3	423.5	422.2	421.2	420.2	419.2	418.3
17.5°	408.8	406.6	404.5	402.7	401.0	399.4	397.7	396.1
20°	396.1	393.6	391.2	389.0	386.9	384.8	382.8	380.7
22.5°	382.0	378.9	375.9	373.5	371.9	370.4	368.8	367.3
25°	358.7	354.8	350.9	348.3	346.9	345.3	343.9	342.5
27.5°	336.5	332.0	327.4	324.0	321.8	319.5	317.3	315.0
30°	320.8	316.0	311.1	307.5	304.8	302.3	299.7	297.2
32.5°	305.1	299.5	294.0	290.0	287.7	285.2	282.8	280.4
35°	280.5	274.5	268.4	264.4	262.3	260.2	258.2	256.1
37.5°	256.5	249.9	243.3	238.7	236.4	233.9	231.6	229.1
40°	240.4	233.7	226.9	222.3	219.8	217.4	214.8	212.4
42.5°	224.1	217.2	210.2	205.6	203.1	200.8	198.3	196.0
45°	200.6	193.8	187.1	182.6	180.3	178.0	175.7	173.4
47.5°	177.6	170.9	164.2	159.8	157.7	155.6	153.5	151.5
50°	162.9	156.3	149.7	145.4	143.5	141.5	139.4	137.4
52.5°	148.9	142.6	136.3	132.1	130.4	128.5	126.6	124.8
55°	127.7	122.1	116.3	112.5	110.7	109.0	107.2	105.4
57.5°	108.5	103.2	98.0	94.6	93.1	91.6	90.1	88.5
60°	95.2	90.4	85.5	82.3	80.8	79.3	77.8	76.3
62.5°	83.7	79.1	74.5	71.6	70.7	69.8	68.9	68.0
65°	68.1	64.8	61.5	59.8	59.5	59.2	58.9	58.6
67.5°	55.0	53.4	51.9	51.1	50.7	50.4	50.1	49.9
70°	47.8	46.8	45.9	45.2	44.8	44.4	44.0	43.6
72.5°	41.6	40.7	40.0	39.5	39.2	39.0	38.7	38.5
75°	32.9	32.2	31.6	31.2	31.1	31.0	30.9	30.8
77.5°	24.9	24.5	24.1	23.9	23.8	23.6	23.5	23.3
80°	19.8	19.4	19.0	18.9	18.9	18.9	18.9	18.9
82.5°	15.0	14.7	14.5	14.4	14.4	14.4	14.4	14.4
85°	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
87.5°	6.6	6.7	6.9	7.0	7.0	7.1	7.2	7.3
90°	20.0	21.0	22.1	22.7	23.1	23.5	23.9	24.3
92.5°	22.0	22.4	23.0	23.4	23.6	23.8	24.0	24.3
95°	37.1	38.2	39.1	39.5	39.3	39.1	38.9	38.7
97.5°	48.6	49.4	50.2	50.7	51.0	51.2	51.5	51.7
100°	54.6	56.2	57.8	58.7	59.1	59.6	59.9	60.3
102.5°	56.9	59.0	61.1	62.4	63.0	63.5	64.1	64.7
105°	59.4	61.5	63.7	65.2	66.1	66.8	67.7	68.4
107.5°	72.4	70.2	68.0	67.2	68.1	68.8	69.7	70.4
110°	117.5	97.6	77.6	68.0	68.7	69.6	70.3	71.2





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CATALOG NUMBER: S122RDIW-S290D970U830-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	251.5	178.5	105.5	69.3	69.9	70.6	71.3	71.9
115°	370.3	277.7	185.0	131.5	117.1	102.6	88.2	73.9
117.5°	570.6	548.3	525.8	491.0	443.6	396.2	348.9	301.5
120°	665.0	667.3	669.8	657.4	630.5	603.4	576.4	549.4
122.5°	705.6	707.0	708.4	706.5	701.3	696.1	690.8	685.6
125°	763.8	765.3	766.7	767.6	768.3	768.8	769.4	770.1
127.5°	817.7	819.7	821.8	822.8	823.0	823.1	823.2	823.3
130°	851.9	854.1	856.3	857.3	857.1	856.9	856.7	856.5
132.5°	885.1	887.0	888.9	889.8	889.5	889.3	889.1	888.9
135°	932.6	934.5	936.5	937.4	937.0	936.5	936.1	935.8
137.5°	976.6	978.5	980.5	981.2	980.5	979.8	979.1	978.5
140°	1005.1	1006.9	1008.7	1009.1	1008.1	1007.1	1006.1	1005.1
142.5°	1031.4	1033.1	1034.7	1035.0	1034.1	1033.0	1032.1	1031.0
145°	1068.3	1069.7	1071.0	1071.3	1070.3	1069.2	1068.3	1067.2
147.5°	1100.3	1101.4	1102.4	1102.5	1101.6	1100.8	1099.9	1099.1
150°	1120.1	1121.2	1122.5	1122.6	1121.6	1120.6	1119.6	1118.6
152.5°	1138.1	1139.3	1140.5	1140.5	1139.2	1137.8	1136.5	1135.2
155°	1162.4	1163.6	1164.8	1164.6	1163.0	1161.4	1159.8	1158.2
157.5°	1182.9	1184.3	1185.6	1185.5	1183.9	1182.4	1180.8	1179.3
160°	1194.9	1196.0	1197.2	1197.1	1195.7	1194.3	1193.0	1191.6
162.5°	1206.0	1207.3	1208.7	1208.5	1206.7	1205.0	1203.3	1201.6
165°	1219.6	1221.0	1222.4	1222.4	1221.0	1219.6	1218.1	1216.7
167.5°	1230.9	1232.3	1233.7	1233.5	1231.7	1229.9	1228.1	1226.3
170°	1236.7	1238.0	1239.4	1239.3	1237.5	1235.7	1233.9	1232.1
172.5°	1241.0	1242.4	1243.8	1243.6	1241.8	1240.0	1238.2	1236.4
175°	1245.7	1247.1	1248.5	1248.2	1246.1	1244.2	1242.2	1240.2
177.5°	1246.2	1247.3	1248.4	1248.3	1246.8	1245.4	1244.0	1242.6
180°	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6

(END OF REPORT)