

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

Luminaire Tested: **S122RDIW-S290D970U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331775  
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-S290D970U835-4F0-1E-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: 4905.6 lumens  
Efficiency: N/A  
Efficacy: 129.1 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

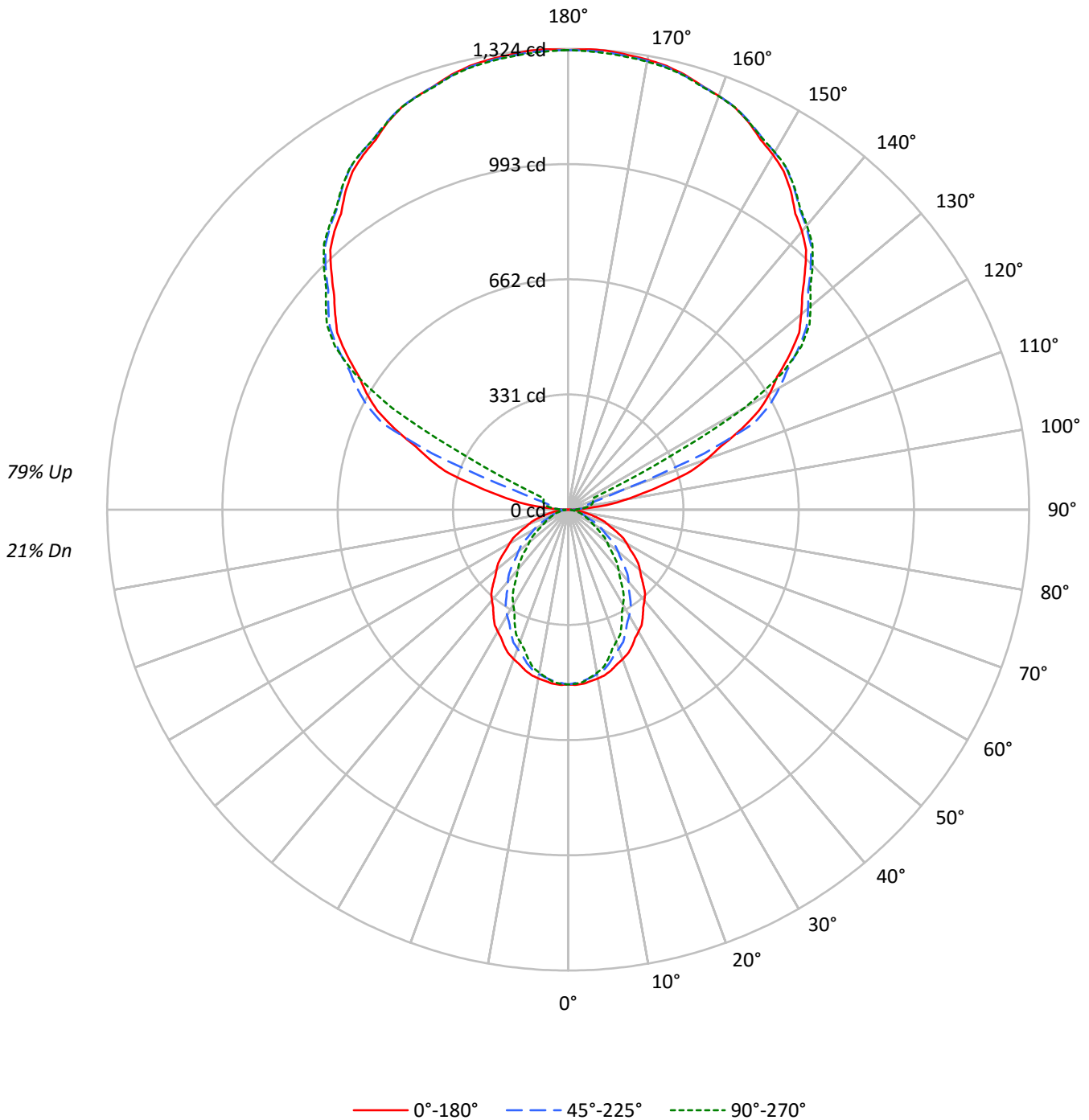
Input Watts (W): 38  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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

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

	0°	45°	90°
0°	8105	8105	8105
5°	8136	8003	8047
10°	8073	7873	7806
15°	7980	7639	7418
20°	7852	7306	6940
25°	7721	6928	6474
30°	7538	6538	5878
35°	7360	6116	5355
40°	7181	5678	4749
45°	6971	5186	4201
50°	6754	4690	3662
55°	6533	4155	3147
60°	6278	3594	2612
65°	5987	3018	2376
70°	5641	2488	2186
75°	5215	2264	2040
80°	4603	2027	1860
85°	3612	1593	1593



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	47.0	1.0
10°-20°	129.0	2.6
20°-30°	181.2	3.7
30°-40°	197.6	4.0
40°-50°	181.6	3.7
50°-60°	142.7	2.9
60°-70°	93.0	1.9
70°-80°	48.0	1.0
80°-90°	15.7	0.3
90°-100°	44.1	0.9
100°-110°	161.5	3.3
110°-120°	431.8	8.8
120°-130°	712.8	14.5
130°-140°	758.0	15.5
140°-150°	704.6	14.4
150°-160°	566.5	11.5
160°-170°	365.0	7.4
170°-180°	125.6	2.6
0°-30°	357.2	7.3
0°-40°	554.7	11.3
0°-60°	879.0	17.9
0°-90°	1035.7	21.1
90°-120°	637.4	13.0
90°-150°	2812.8	57.3
90°-180°	3870.0	78.9
0°-180°	4905.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	502	502	502	502	502	
5°	502	500	494	498	496	48
15°	477	472	457	449	444	134
25°	433	418	389	371	363	199
35°	373	349	310	283	272	234
45°	305	274	227	196	184	236
55°	232	196	148	121	112	207
65°	157	120	79	64	62	155
75°	84	53	36	33	33	88
85°	20	10	9	9	9	23
90°	1	11	19	24	26	4
95°	62	33	37	42	41	76
105°	290	303	58	68	73	310
115°	549	566	590	168	78	541
125°	777	790	807	814	817	692
135°	961	976	985	994	993	742
145°	1115	1115	1130	1136	1132	697
155°	1228	1220	1231	1236	1229	566
165°	1294	1289	1291	1297	1291	365
175°	1323	1317	1319	1324	1316	126
180°	1320	1320	1320	1320	1320	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	502.0	502.0	502.0	502.0	502.0	502.0	502.0	502.0	502.0	502.0	502.0
2.5°	503.8	503.4	503.0	502.6	502.2	501.5	500.6	499.8	498.9	498.0	498.8
5°	502.0	501.5	501.0	500.5	500.0	499.0	497.7	496.4	495.1	493.8	494.7
7.5°	496.8	496.2	495.5	494.9	494.3	493.2	491.7	490.1	488.6	487.1	487.3
10°	492.4	491.7	491.0	490.3	489.6	488.2	486.2	484.2	482.2	480.2	479.9
12.5°	487.0	486.1	485.2	484.4	483.5	481.8	479.2	476.6	474.0	471.4	470.9
15°	477.4	476.3	475.2	474.1	473.0	470.7	467.3	463.9	460.4	457.0	455.1
17.5°	465.7	464.0	462.3	460.6	458.9	455.9	451.5	447.1	442.7	438.3	436.0
20°	457.0	455.0	453.0	450.9	448.9	445.4	440.3	435.3	430.3	425.2	422.7
22.5°	447.6	445.3	443.0	440.8	438.5	434.5	428.8	423.1	417.5	411.8	408.5
25°	433.4	430.1	426.9	423.7	420.5	415.5	408.8	402.2	395.5	388.9	384.7
27.5°	416.3	412.8	409.3	405.8	402.2	396.7	389.2	381.7	374.2	366.7	361.9
30°	404.3	400.5	396.6	392.8	389.0	383.0	374.9	366.9	358.8	350.7	345.6
32.5°	392.7	388.2	383.7	379.2	374.7	368.4	360.2	351.9	343.7	335.4	329.6
35°	373.4	368.3	363.1	358.0	352.8	345.8	336.9	328.0	319.2	310.3	303.9
37.5°	354.2	348.5	342.8	337.2	331.5	324.0	314.5	305.0	295.6	286.1	279.1
40°	340.7	334.7	328.6	322.5	316.5	308.6	298.8	289.0	279.2	269.4	262.2
42.5°	326.9	320.5	314.1	307.8	301.4	293.1	283.0	272.9	262.8	252.7	245.3
45°	305.3	298.5	291.7	285.0	278.2	269.5	258.9	248.3	237.7	227.1	220.0
47.5°	284.2	277.0	269.9	262.7	255.5	246.5	235.5	224.6	213.6	202.7	195.6
50°	268.9	261.8	254.6	247.4	240.3	231.1	220.0	208.9	197.8	186.7	179.7
52.5°	254.0	246.5	239.1	231.6	224.1	214.9	204.0	193.2	182.3	171.4	164.7
55°	232.1	224.3	216.4	208.5	200.6	191.3	180.3	169.4	158.5	147.6	141.6
57.5°	209.7	201.6	193.5	185.5	177.4	168.1	157.6	147.2	136.7	126.2	120.6
60°	194.4	186.4	178.3	170.2	162.1	152.9	142.5	132.1	121.7	111.3	106.1
62.5°	179.5	171.5	163.4	155.3	147.2	138.2	128.3	118.4	108.5	98.6	93.7
65°	156.7	148.5	140.4	132.2	124.0	115.4	106.3	97.2	88.1	79.0	75.6
67.5°	134.7	126.6	118.5	110.4	102.3	94.1	85.9	77.8	69.6	61.4	59.8
70°	119.5	111.6	103.7	95.9	88.0	80.6	73.6	66.6	59.7	52.7	51.7
72.5°	104.9	97.4	89.8	82.3	74.7	68.2	62.6	57.0	51.4	45.8	44.9
75°	83.6	76.5	69.5	62.4	55.3	50.1	46.6	43.2	39.8	36.3	35.6
77.5°	62.6	56.4	50.2	44.0	37.8	33.9	32.2	30.6	28.9	27.3	26.9
80°	49.5	44.4	39.2	34.1	28.9	25.8	24.8	23.8	22.8	21.8	21.4
82.5°	37.5	33.5	29.5	25.5	21.5	19.1	18.4	17.7	17.0	16.4	16.1
85°	19.5	17.4	15.3	13.2	11.1	9.8	9.5	9.2	8.9	8.6	8.6
87.5°	6.0	5.8	5.6	5.5	5.3	5.4	5.7	6.1	6.4	6.7	6.9
90°	1.0	3.3	5.6	8.0	10.3	12.3	14.0	15.7	17.4	19.1	20.2
92.5°	19.3	19.1	18.9	18.7	18.5	18.8	19.6	20.5	21.3	22.2	22.7
95°	62.1	55.1	48.1	41.1	34.1	31.3	32.8	34.3	35.8	37.3	38.3
97.5°	123.3	103.5	83.8	64.0	44.3	36.1	39.6	43.0	46.4	49.9	50.7
100°	169.1	140.0	110.9	81.9	52.8	40.0	43.6	47.2	50.9	54.5	56.2
102.5°	219.6	213.4	207.3	201.1	194.9	176.8	146.6	116.4	86.2	56.0	58.2
105°	290.5	296.9	303.2	309.6	316.0	290.2	232.2	174.2	116.3	58.3	60.6
107.5°	371.3	376.5	381.6	386.7	391.9	359.7	290.2	220.6	151.1	81.6	79.2
110°	423.3	427.8	432.2	436.7	441.1	412.7	351.3	290.0	228.6	167.2	146.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	472.2	476.2	480.1	484.1	488.0	482.4	467.3	452.1	436.9	421.8	344.3
115°	549.4	553.0	556.7	560.3	563.9	568.3	573.6	578.9	584.3	589.6	491.2
117.5°	618.4	622.5	626.5	630.5	634.6	638.4	642.1	645.7	649.4	653.0	629.2
120°	668.9	672.1	675.2	678.4	681.6	685.1	688.9	692.8	696.6	700.4	703.0
122.5°	711.7	715.0	718.4	721.7	725.1	728.9	733.0	737.2	741.3	745.5	747.0
125°	776.8	779.6	782.4	785.1	787.9	791.3	795.3	799.4	803.4	807.4	808.9
127.5°	835.9	839.0	842.0	845.1	848.1	851.2	854.2	857.2	860.2	863.2	865.4
130°	873.4	876.8	880.2	883.5	886.9	889.8	892.1	894.5	896.8	899.2	901.5
132.5°	911.6	914.5	917.4	920.2	923.1	925.7	928.1	930.4	932.7	935.1	937.1
135°	961.3	964.7	968.1	971.5	974.9	977.5	979.4	981.3	983.2	985.2	987.3
137.5°	1011.5	1013.9	1016.3	1018.7	1021.0	1023.3	1025.5	1027.6	1029.8	1032.0	1034.1
140°	1044.4	1046.1	1047.8	1049.5	1051.2	1053.2	1055.5	1057.9	1060.2	1062.6	1064.5
142.5°	1071.9	1073.4	1075.0	1076.5	1078.0	1080.1	1082.8	1085.5	1088.2	1090.8	1092.6
145°	1115.1	1114.9	1114.7	1114.5	1114.3	1116.0	1119.6	1123.2	1126.8	1130.4	1131.9
147.5°	1152.8	1151.9	1151.1	1150.3	1149.5	1150.9	1154.5	1158.0	1161.6	1165.2	1166.3
150°	1177.2	1175.7	1174.2	1172.8	1171.3	1172.2	1175.6	1179.0	1182.4	1185.8	1187.1
152.5°	1197.9	1196.2	1194.5	1192.9	1191.2	1192.0	1195.2	1198.5	1201.7	1204.9	1206.2
155°	1227.9	1225.9	1224.0	1222.1	1220.2	1220.5	1223.1	1225.6	1228.2	1230.7	1232.0
157.5°	1251.4	1249.8	1248.1	1246.5	1244.9	1245.0	1246.8	1248.6	1250.3	1252.1	1253.6
160°	1265.1	1263.9	1262.6	1261.3	1260.0	1260.0	1261.3	1262.6	1263.9	1265.1	1266.4
162.5°	1277.4	1276.1	1274.8	1273.5	1272.3	1272.2	1273.3	1274.4	1275.5	1276.6	1278.0
165°	1293.8	1292.5	1291.2	1290.0	1288.7	1288.4	1289.0	1289.6	1290.3	1290.9	1292.4
167.5°	1306.0	1304.7	1303.5	1302.2	1300.9	1300.6	1301.2	1301.8	1302.4	1303.0	1304.4
170°	1312.9	1311.6	1310.4	1309.1	1307.8	1307.4	1307.8	1308.2	1308.7	1309.1	1310.6
172.5°	1317.5	1316.2	1314.9	1313.7	1312.4	1312.0	1312.4	1312.8	1313.2	1313.7	1315.2
175°	1323.4	1321.9	1320.4	1319.0	1317.5	1316.9	1317.4	1317.8	1318.2	1318.6	1320.1
177.5°	1324.4	1323.2	1322.0	1320.8	1319.6	1319.1	1319.3	1319.4	1319.6	1319.8	1321.0
180°	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	502.0	502.0	502.0	502.0	502.0	502.0	502.0	502.0
2.5°	499.6	500.4	501.2	501.5	501.4	501.2	501.0	500.9
5°	495.6	496.5	497.4	497.7	497.4	497.1	496.8	496.5
7.5°	487.6	487.9	488.1	488.0	487.5	486.9	486.4	485.9
10°	479.6	479.3	479.0	478.5	477.9	477.3	476.7	476.1
12.5°	470.4	469.8	469.3	468.5	467.5	466.5	465.5	464.5
15°	453.2	451.2	449.3	447.9	446.9	445.8	444.8	443.8
17.5°	433.7	431.4	429.2	427.2	425.4	423.7	421.9	420.2
20°	420.2	417.6	415.1	412.7	410.5	408.3	406.1	403.9
22.5°	405.3	402.0	398.8	396.3	394.6	393.0	391.3	389.7
25°	380.6	376.4	372.3	369.5	368.0	366.4	364.9	363.4
27.5°	357.0	352.2	347.4	343.8	341.4	339.0	336.6	334.2
30°	340.4	335.3	330.1	326.2	323.4	320.7	318.0	315.3
32.5°	323.7	317.8	311.9	307.7	305.2	302.6	300.0	297.5
35°	297.6	291.2	284.8	280.5	278.3	276.1	273.9	271.7
37.5°	272.1	265.1	258.1	253.3	250.8	248.2	245.7	243.1
40°	255.1	247.9	240.7	235.8	233.2	230.6	227.9	225.3
42.5°	237.8	230.4	223.0	218.1	215.5	213.0	210.4	207.9
45°	212.8	205.6	198.5	193.7	191.3	188.8	186.4	184.0
47.5°	188.4	181.3	174.2	169.5	167.3	165.1	162.9	160.7
50°	172.8	165.8	158.8	154.3	152.2	150.1	147.9	145.8
52.5°	158.0	151.3	144.6	140.2	138.3	136.3	134.3	132.4
55°	135.5	129.5	123.4	119.4	117.5	115.6	113.7	111.8
57.5°	115.1	109.5	104.0	100.4	98.8	97.2	95.6	93.9
60°	101.0	95.9	90.7	87.3	85.7	84.1	82.5	80.9
62.5°	88.8	83.9	79.0	76.0	75.0	74.1	73.1	72.1
65°	72.2	68.7	65.3	63.4	63.1	62.8	62.5	62.2
67.5°	58.3	56.7	55.1	54.2	53.8	53.5	53.2	52.9
70°	50.7	49.7	48.7	48.0	47.5	47.1	46.7	46.3
72.5°	44.1	43.2	42.4	41.9	41.6	41.4	41.1	40.9
75°	34.9	34.2	33.5	33.1	33.0	32.9	32.8	32.7
77.5°	26.4	26.0	25.6	25.4	25.2	25.0	24.9	24.7
80°	21.0	20.6	20.2	20.0	20.0	20.0	20.0	20.0
82.5°	15.9	15.6	15.4	15.3	15.3	15.3	15.3	15.3
85°	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
87.5°	7.0	7.1	7.3	7.4	7.4	7.5	7.6	7.7
90°	21.2	22.3	23.4	24.1	24.5	24.9	25.4	25.8
92.5°	23.3	23.8	24.4	24.8	25.0	25.3	25.5	25.8
95°	39.4	40.5	41.5	41.9	41.7	41.5	41.3	41.1
97.5°	51.6	52.4	53.3	53.8	54.1	54.3	54.6	54.8
100°	57.9	59.6	61.3	62.3	62.7	63.2	63.6	64.0
102.5°	60.4	62.6	64.8	66.2	66.8	67.4	68.0	68.6
105°	63.0	65.3	67.6	69.2	70.1	70.9	71.8	72.6
107.5°	76.8	74.5	72.1	71.3	72.2	73.0	73.9	74.7
110°	124.7	103.5	82.3	72.1	72.9	73.8	74.6	75.5





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CATALOG NUMBER: S122RDIW-S290D970U835-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	266.8	189.4	111.9	73.5	74.2	74.9	75.6	76.3
115°	392.9	294.6	196.3	139.5	124.2	108.9	93.6	78.4
117.5°	605.4	581.7	557.9	520.9	470.6	420.4	370.2	319.9
120°	705.5	708.0	710.6	697.5	668.9	640.2	611.5	582.9
122.5°	748.6	750.1	751.6	749.6	744.0	738.5	732.9	727.4
125°	810.4	811.9	813.4	814.4	815.1	815.7	816.3	817.0
127.5°	867.6	869.7	871.9	873.0	873.2	873.3	873.4	873.5
130°	903.8	906.2	908.5	909.6	909.3	909.1	908.9	908.7
132.5°	939.1	941.1	943.1	944.0	943.7	943.5	943.3	943.1
135°	989.4	991.5	993.6	994.5	994.1	993.6	993.2	992.8
137.5°	1036.1	1038.2	1040.3	1041.0	1040.3	1039.5	1038.8	1038.1
140°	1066.4	1068.3	1070.2	1070.6	1069.6	1068.5	1067.4	1066.4
142.5°	1094.3	1096.1	1097.8	1098.1	1097.1	1096.0	1095.0	1093.9
145°	1133.4	1134.9	1136.3	1136.6	1135.5	1134.4	1133.4	1132.3
147.5°	1167.4	1168.5	1169.6	1169.7	1168.8	1167.9	1167.0	1166.1
150°	1188.4	1189.6	1190.9	1191.0	1190.0	1188.9	1187.8	1186.8
152.5°	1207.5	1208.7	1210.0	1210.0	1208.6	1207.2	1205.8	1204.4
155°	1233.3	1234.5	1235.8	1235.6	1233.9	1232.2	1230.5	1228.8
157.5°	1255.0	1256.5	1257.9	1257.8	1256.1	1254.5	1252.8	1251.2
160°	1267.7	1268.9	1270.2	1270.1	1268.6	1267.1	1265.7	1264.2
162.5°	1279.5	1280.9	1282.4	1282.2	1280.3	1278.5	1276.7	1274.9
165°	1293.9	1295.4	1296.9	1296.9	1295.4	1293.9	1292.4	1290.9
167.5°	1305.9	1307.4	1308.9	1308.7	1306.8	1304.9	1303.0	1301.1
170°	1312.1	1313.5	1315.0	1314.8	1312.9	1311.0	1309.1	1307.2
172.5°	1316.6	1318.1	1319.6	1319.4	1317.5	1315.6	1313.7	1311.8
175°	1321.6	1323.1	1324.6	1324.3	1322.1	1320.0	1317.9	1315.8
177.5°	1322.2	1323.3	1324.5	1324.4	1322.8	1321.3	1319.8	1318.3
180°	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5

(END OF REPORT)