

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: P332291-830

Luminaire Tested: **S123RDIP-S560D1025U830-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332291-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDIP-S560D1025U830-4F0-1E-UDD-F  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1025 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5876.3 lumens  
Efficiency: N/A  
Efficacy: 132.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

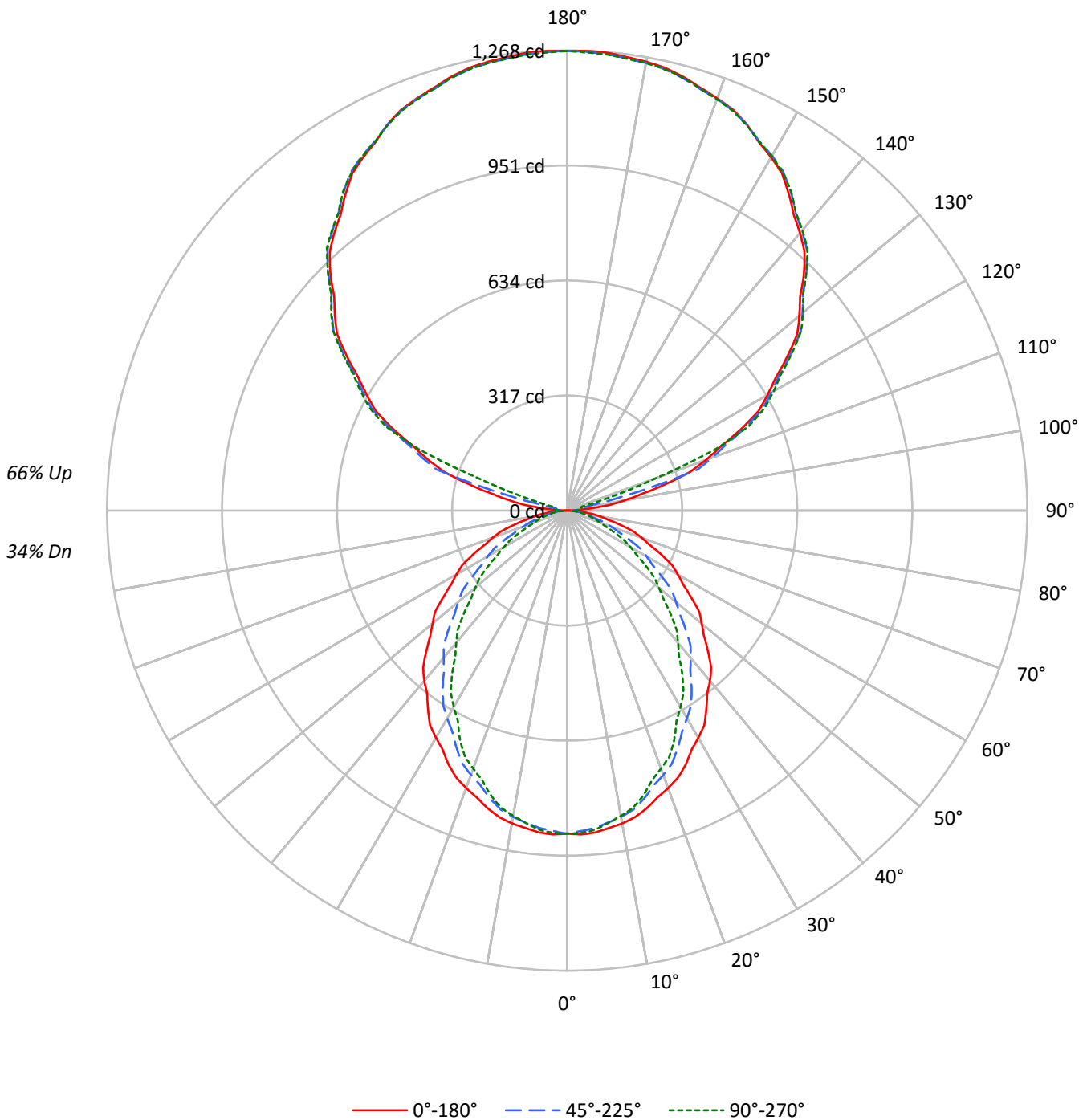
Input Watts (W): 44.5  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20									20									20									20										
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	50	30	10	50	30	10	0														
RCR																																						
0	103	103	103	103	93	93	93	93	75	75	75	57	57	57	42	42	42	34																				
1	94	90	87	83	85	82	79	76	66	63	62	51	49	48	37	36	36	29																				
2	86	79	73	68	78	72	67	62	58	54	51	45	43	41	33	32	30	25																				
3	79	70	63	57	71	63	57	52	51	47	43	40	37	34	29	28	26	21																				
4	72	62	54	48	65	56	50	44	45	41	37	36	32	30	26	24	23	18																				
5	66	55	47	41	60	50	43	38	41	36	32	32	28	26	24	22	20	16																				
6	61	49	41	36	55	45	38	33	37	32	28	29	25	23	22	19	17	14																				
7	56	44	37	31	51	41	34	29	33	28	24	26	23	20	20	17	16	13																				
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14	11																				
9	49	37	29	25	44	34	27	23	28	23	19	22	19	16	17	14	13	10																				
10	45	34	27	22	41	31	25	20	25	21	17	20	17	14	16	13	11	9																				

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

	0°	45°	90°
0°	9582	9582	9582
5°	9619	9487	9541
10°	9565	9368	9335
15°	9461	9149	9052
20°	9321	8874	8668
25°	9175	8567	8291
30°	8983	8211	7762
35°	8784	7857	7276
40°	8604	7436	6674
45°	8363	7024	6132
50°	8100	6553	5526
55°	7833	6016	4960
60°	7584	5440	4336
65°	7264	4819	3713
70°	6861	4047	2999
75°	6276	3182	2824
80°	5597	2820	2591
85°	4730	2495	2322



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	83.6	1.4
10°-20°	232.6	4.0
20°-30°	334.9	5.7
30°-40°	377.3	6.4
40°-50°	360.9	6.1
50°-60°	295.6	5.0
60°-70°	199.4	3.4
70°-80°	100.3	1.7
80°-90°	30.1	0.5
90°-100°	46.0	0.8
100°-110°	219.4	3.7
110°-120°	527.0	9.0
120°-130°	671.1	11.4
130°-140°	717.1	12.2
140°-150°	670.6	11.4
150°-160°	540.9	9.2
160°-170°	349.1	5.9
170°-180°	120.3	2.0
0°-30°	651.1	11.1
0°-40°	1028.4	17.5
0°-60°	1684.8	28.7
0°-90°	2014.7	34.3
90°-120°	792.5	13.5
90°-150°	2851.3	48.5
90°-180°	3862.0	65.7
0°-180°	5876.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	890	890	890	890	890	
5°	890	886	878	884	883	84
15°	849	840	821	817	812	239
25°	772	754	721	706	698	355
35°	668	642	598	568	554	418
45°	549	516	461	422	403	424
55°	417	380	321	280	264	374
65°	285	245	189	155	146	282
75°	151	116	76	70	68	161
85°	38	23	20	19	19	43
90°	1	10	23	26	28	5
95°	57	22	29	35	36	71
105°	280	285	206	49	41	297
115°	526	532	540	549	553	519
125°	741	749	753	754	756	662
135°	923	928	932	935	932	710
145°	1065	1071	1074	1075	1075	666
155°	1173	1171	1172	1176	1171	540
165°	1237	1234	1233	1240	1234	349
175°	1266	1262	1262	1268	1262	120
180°	1266	1266	1266	1266	1266	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	890.2	890.2	890.2	890.2	890.2	890.2	890.2	890.2	890.2	890.2	890.2
2.5°	893.2	892.6	892.1	891.6	891.1	890.0	888.5	886.9	885.4	883.9	885.3
5°	890.2	889.5	888.6	887.9	887.0	885.7	883.7	881.8	879.9	878.0	879.4
7.5°	882.0	881.2	880.2	879.4	878.5	876.8	874.4	871.9	869.3	866.9	867.6
10°	875.1	873.9	872.8	871.7	870.6	868.6	865.7	862.8	859.9	857.1	857.1
12.5°	865.3	864.0	862.7	861.5	860.3	857.9	854.3	850.8	847.3	843.8	843.7
15°	849.0	847.3	845.6	843.8	842.1	838.9	834.4	829.9	825.4	821.0	820.1
17.5°	828.7	826.7	824.6	822.6	820.5	816.6	810.9	805.2	799.5	793.8	792.1
20°	813.7	811.2	808.6	806.0	803.4	799.1	793.0	786.9	780.8	774.7	772.6
22.5°	796.9	794.0	791.1	788.1	785.1	780.4	773.9	767.4	761.0	754.5	751.9
25°	772.5	768.5	764.5	760.5	756.5	750.8	743.4	736.0	728.7	721.3	717.9
27.5°	742.9	738.5	734.1	729.6	725.2	718.9	710.7	702.5	694.3	686.1	681.4
30°	722.7	717.9	713.1	708.3	703.5	696.5	687.6	678.6	669.6	660.6	655.2
32.5°	702.5	697.1	691.6	686.2	680.7	673.3	663.7	654.2	644.7	635.2	629.2
35°	668.5	662.8	657.0	651.3	645.5	637.6	627.6	617.7	607.8	597.9	590.9
37.5°	634.2	627.8	621.4	614.9	608.5	600.0	589.4	578.8	568.2	557.5	549.7
40°	612.3	605.2	598.1	591.1	584.0	574.8	563.5	552.0	540.6	529.2	520.8
42.5°	587.4	580.3	573.3	566.3	559.2	549.8	538.0	526.2	514.4	502.7	493.5
45°	549.4	542.2	535.0	527.8	520.6	510.8	498.4	486.1	473.7	461.4	452.2
47.5°	511.4	503.5	495.6	487.7	479.8	469.7	457.2	444.9	432.5	420.2	410.3
50°	483.7	476.2	468.6	461.1	453.6	443.3	430.3	417.4	404.4	391.3	381.4
52.5°	458.9	450.7	442.5	434.3	426.2	415.7	402.7	389.9	377.0	364.2	353.8
55°	417.4	409.4	401.6	393.7	385.9	375.1	361.5	347.9	334.2	320.6	311.2
57.5°	378.9	370.3	361.7	353.2	344.6	333.5	319.8	306.1	292.4	278.7	269.9
60°	352.3	343.6	334.7	325.8	317.1	305.9	292.7	279.4	266.0	252.7	244.0
62.5°	325.7	317.0	308.1	299.3	290.5	279.4	266.1	252.8	239.4	226.1	218.0
65°	285.2	276.4	267.6	258.7	249.9	239.2	226.7	214.2	201.7	189.2	181.3
67.5°	244.6	235.7	226.8	217.8	209.0	198.5	186.4	174.5	162.5	150.4	144.6
70°	218.0	209.3	200.8	192.1	183.4	173.4	162.2	151.0	139.8	128.6	122.9
72.5°	191.4	182.9	174.4	165.9	157.3	148.0	137.8	127.5	117.3	107.2	102.5
75°	150.9	143.2	135.5	127.8	120.1	111.8	103.0	94.2	85.4	76.5	74.9
77.5°	114.0	107.0	100.0	93.0	86.1	79.7	74.1	68.4	62.7	57.0	56.2
80°	90.3	83.7	77.1	70.5	63.9	59.0	55.6	52.2	48.8	45.5	45.0
82.5°	67.8	62.0	56.4	50.7	45.0	41.4	39.8	38.3	36.7	35.1	34.6
85°	38.3	34.8	31.2	27.7	24.1	22.1	21.7	21.2	20.7	20.2	19.9
87.5°	14.0	13.1	12.1	11.0	10.1	9.9	10.4	10.9	11.5	12.1	12.1
90°	0.9	3.0	5.1	7.3	9.3	11.7	14.4	17.2	19.9	22.6	23.4
92.5°	17.5	16.9	16.3	15.7	15.2	15.9	17.9	20.0	22.1	24.1	25.4
95°	57.4	48.8	40.2	31.7	23.1	20.0	22.2	24.6	26.9	29.1	30.6
97.5°	115.4	111.5	107.6	103.8	99.9	90.5	75.5	60.4	45.3	30.3	32.0
100°	159.0	163.2	167.4	171.5	175.7	161.5	128.8	96.2	63.6	31.0	32.7
102.5°	208.7	211.7	214.7	217.7	220.7	204.4	168.8	133.2	97.6	61.9	56.7
105°	280.3	282.7	284.9	287.3	289.5	281.3	262.5	243.6	224.9	206.0	169.0
107.5°	356.0	357.9	359.7	361.6	363.4	365.8	368.7	371.7	374.7	377.7	350.5
110°	406.4	408.1	409.7	411.4	413.1	415.1	417.4	419.7	422.0	424.3	417.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	454.6	456.1	457.6	459.1	460.6	462.5	464.9	467.1	469.4	471.7	471.8
115°	525.9	527.2	528.4	529.7	530.9	532.5	534.3	536.2	538.1	540.0	542.2
117.5°	594.9	596.5	598.0	599.6	601.2	602.4	603.3	604.4	605.3	606.2	607.9
120°	637.8	639.7	641.6	643.5	645.4	646.7	647.2	647.9	648.6	649.1	650.8
122.5°	681.6	683.1	684.6	686.2	687.7	688.9	689.7	690.5	691.3	692.0	693.2
125°	741.3	743.0	744.7	746.4	748.0	749.3	750.2	750.9	751.8	752.6	753.1
127.5°	799.3	801.0	802.7	804.3	806.0	807.3	808.3	809.4	810.3	811.3	812.0
130°	835.5	837.1	838.8	840.5	842.2	843.4	844.2	845.1	845.8	846.7	847.5
132.5°	870.1	871.8	873.4	875.1	876.8	877.9	878.5	879.2	880.0	880.6	881.5
135°	922.9	924.2	925.4	926.7	927.9	929.0	929.8	930.7	931.5	932.4	932.9
137.5°	968.1	969.7	971.3	972.9	974.4	975.4	975.9	976.4	976.9	977.3	978.3
140°	998.2	999.5	1000.7	1001.9	1003.2	1004.2	1004.8	1005.4	1006.1	1006.6	1007.5
142.5°	1026.1	1027.3	1028.5	1029.8	1031.0	1032.0	1032.6	1033.2	1033.9	1034.5	1035.2
145°	1065.0	1066.5	1067.9	1069.4	1070.8	1071.8	1072.2	1072.6	1073.0	1073.5	1073.8
147.5°	1101.6	1102.7	1103.6	1104.6	1105.5	1106.2	1106.6	1107.0	1107.5	1107.9	1108.3
150°	1124.3	1124.9	1125.5	1126.1	1126.7	1127.3	1127.7	1128.1	1128.5	1129.0	1129.4
152.5°	1144.5	1144.9	1145.2	1145.5	1145.8	1146.0	1146.2	1146.5	1146.8	1147.0	1147.7
155°	1173.2	1172.7	1172.3	1172.0	1171.5	1171.4	1171.6	1171.8	1172.1	1172.2	1173.3
157.5°	1195.3	1195.3	1195.3	1195.2	1195.2	1195.0	1194.9	1194.7	1194.5	1194.2	1195.5
160°	1208.9	1208.7	1208.5	1208.3	1208.1	1207.9	1207.7	1207.5	1207.2	1207.0	1208.3
162.5°	1221.7	1221.2	1220.6	1220.1	1219.6	1219.2	1219.0	1218.7	1218.5	1218.3	1219.7
165°	1237.2	1236.5	1235.9	1235.3	1234.6	1234.3	1234.0	1233.8	1233.6	1233.4	1235.0
167.5°	1249.2	1248.4	1247.5	1246.7	1245.9	1245.4	1245.4	1245.4	1245.4	1245.4	1247.1
170°	1255.9	1255.1	1254.3	1253.5	1252.6	1252.2	1252.2	1252.2	1252.2	1252.2	1253.9
172.5°	1260.5	1259.5	1258.5	1257.4	1256.5	1256.0	1256.2	1256.4	1256.5	1256.7	1258.4
175°	1266.3	1265.3	1264.2	1263.2	1262.2	1261.7	1261.9	1262.2	1262.3	1262.5	1264.0
177.5°	1267.8	1267.0	1266.1	1265.3	1264.5	1264.1	1264.3	1264.5	1264.6	1264.8	1266.1
180°	1266.3	1266.3	1266.3	1266.3	1266.3	1266.3	1266.3	1266.3	1266.3	1266.3	1266.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	890.2	890.2	890.2	890.2	890.2	890.2	890.2	890.2
2.5°	886.7	888.2	889.6	890.1	889.9	889.6	889.4	889.1
5°	880.8	882.3	883.7	884.3	884.0	883.6	883.4	883.0
7.5°	868.5	869.2	870.1	870.2	869.6	869.1	868.6	868.0
10°	857.3	857.5	857.6	857.3	856.6	855.7	855.0	854.1
12.5°	843.6	843.5	843.4	842.8	841.9	840.9	840.1	839.1
15°	819.4	818.5	817.7	816.7	815.6	814.5	813.4	812.3
17.5°	790.4	788.7	786.9	785.3	783.6	781.9	780.2	778.6
20°	770.5	768.5	766.4	764.4	762.4	760.5	758.6	756.7
22.5°	749.3	746.7	744.1	741.9	740.1	738.3	736.5	734.7
25°	714.5	711.1	707.8	705.2	703.5	701.7	699.9	698.1
27.5°	676.7	672.0	667.3	663.6	660.9	658.3	655.5	652.8
30°	649.7	644.2	638.9	634.8	632.3	629.7	627.1	624.5
32.5°	623.3	617.3	611.3	607.0	604.4	601.6	598.9	596.3
35°	584.0	577.1	570.2	565.3	562.4	559.6	556.7	553.7
37.5°	541.9	534.0	526.2	520.6	517.0	513.4	509.8	506.2
40°	512.6	504.2	495.9	489.8	486.2	482.5	478.8	475.0
42.5°	484.5	475.3	466.2	460.0	456.7	453.4	450.1	446.8
45°	443.1	433.9	424.8	418.3	414.4	410.6	406.7	402.8
47.5°	400.3	390.4	380.4	373.7	370.3	366.8	363.4	360.0
50°	371.5	361.5	351.6	344.7	341.0	337.3	333.7	330.0
52.5°	343.6	333.2	322.8	316.0	312.7	309.4	306.1	302.8
55°	302.0	292.7	283.3	277.1	273.9	270.7	267.5	264.3
57.5°	261.1	252.3	243.6	237.8	235.1	232.3	229.6	226.9
60°	235.4	226.7	218.0	212.4	209.6	206.9	204.2	201.4
62.5°	209.8	201.7	193.5	188.0	185.2	182.3	179.5	176.6
65°	173.4	165.6	157.7	152.9	151.2	149.4	147.6	145.8
67.5°	138.7	132.8	127.0	123.1	121.2	119.3	117.4	115.6
70°	117.3	111.7	106.0	102.4	100.6	98.9	97.1	95.3
72.5°	97.9	93.4	88.8	86.1	85.4	84.6	83.9	83.1
75°	73.3	71.7	70.1	69.2	68.8	68.5	68.1	67.9
77.5°	55.3	54.5	53.5	53.0	52.7	52.3	52.0	51.7
80°	44.5	44.0	43.5	43.2	42.9	42.5	42.2	41.8
82.5°	34.1	33.6	33.2	32.9	32.8	32.8	32.7	32.6
85°	19.6	19.2	18.9	18.8	18.8	18.8	18.8	18.8
87.5°	12.1	12.2	12.2	12.2	12.2	12.1	12.1	12.0
90°	24.2	25.1	25.9	26.6	27.0	27.4	27.8	28.2
92.5°	26.8	28.1	29.4	30.3	30.4	30.7	31.0	31.2
95°	32.0	33.6	35.1	35.7	35.7	35.7	35.7	35.7
97.5°	33.6	35.3	36.9	37.9	38.2	38.4	38.5	38.7
100°	34.4	36.1	37.7	38.6	38.9	39.1	39.3	39.5
102.5°	51.6	46.4	41.2	38.7	39.1	39.5	39.9	40.2
105°	132.1	95.0	58.1	39.7	40.2	40.5	41.0	41.4
107.5°	323.4	296.2	269.1	241.6	213.7	185.8	157.9	130.0
110°	410.5	403.6	396.7	378.3	348.4	318.5	288.6	258.7





TEST NUMBER: P332291-830

CATALOG NUMBER: S123RDIP-S560D1025U830-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	471.9	472.1	472.2	469.1	462.8	456.5	450.2	443.8
115°	544.2	546.3	548.4	549.9	550.6	551.5	552.3	553.2
117.5°	609.6	611.2	612.9	613.9	614.1	614.2	614.3	614.5
120°	652.5	654.1	655.8	656.7	656.7	656.7	656.7	656.7
122.5°	694.4	695.6	696.7	697.4	697.6	697.8	697.9	698.0
125°	753.5	753.8	754.3	754.7	755.2	755.5	756.0	756.4
127.5°	812.7	813.3	814.0	814.2	813.7	813.3	812.8	812.5
130°	848.4	849.2	850.1	850.3	849.9	849.4	849.0	848.6
132.5°	882.2	883.1	883.9	884.0	883.4	882.9	882.3	881.7
135°	933.6	934.2	934.8	934.8	934.2	933.6	932.9	932.4
137.5°	979.3	980.3	981.3	981.6	981.2	980.8	980.3	980.0
140°	1008.3	1009.2	1010.0	1010.2	1009.7	1009.4	1009.0	1008.5
142.5°	1035.9	1036.5	1037.2	1037.2	1036.6	1036.0	1035.5	1034.9
145°	1074.3	1074.7	1075.2	1075.3	1075.3	1075.3	1075.3	1075.3
147.5°	1108.7	1109.1	1109.6	1109.3	1108.3	1107.4	1106.4	1105.4
150°	1129.8	1130.2	1130.7	1130.5	1129.9	1129.3	1128.6	1128.0
152.5°	1148.5	1149.2	1150.0	1149.9	1149.0	1148.0	1147.1	1146.0
155°	1174.3	1175.4	1176.4	1176.3	1175.1	1173.8	1172.5	1171.3
157.5°	1196.7	1198.0	1199.3	1199.1	1197.4	1195.8	1194.2	1192.6
160°	1209.6	1210.8	1212.0	1211.9	1210.5	1209.0	1207.6	1206.1
162.5°	1221.2	1222.6	1224.0	1224.1	1222.8	1221.4	1220.2	1218.9
165°	1236.7	1238.4	1240.1	1240.2	1238.7	1237.3	1235.8	1234.4
167.5°	1248.8	1250.5	1252.1	1252.1	1250.5	1248.8	1247.1	1245.4
170°	1255.6	1257.3	1258.9	1258.9	1257.3	1255.6	1253.9	1252.2
172.5°	1260.1	1261.7	1263.4	1263.3	1261.5	1259.6	1257.8	1255.9
175°	1265.5	1267.0	1268.4	1268.3	1266.6	1265.0	1263.3	1261.6
177.5°	1267.4	1268.9	1270.2	1270.0	1268.3	1266.7	1265.0	1263.3
180°	1266.3	1266.3	1266.3	1266.3	1266.3	1266.3	1266.3	1266.3

(END OF REPORT)