

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: P332425-830

Luminaire Tested: **S123RDIW-S560D1320U830-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332425-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDIW-S560D1320U830-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1320 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6327.4 lumens
Efficiency: N/A
Efficacy: 117.6 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

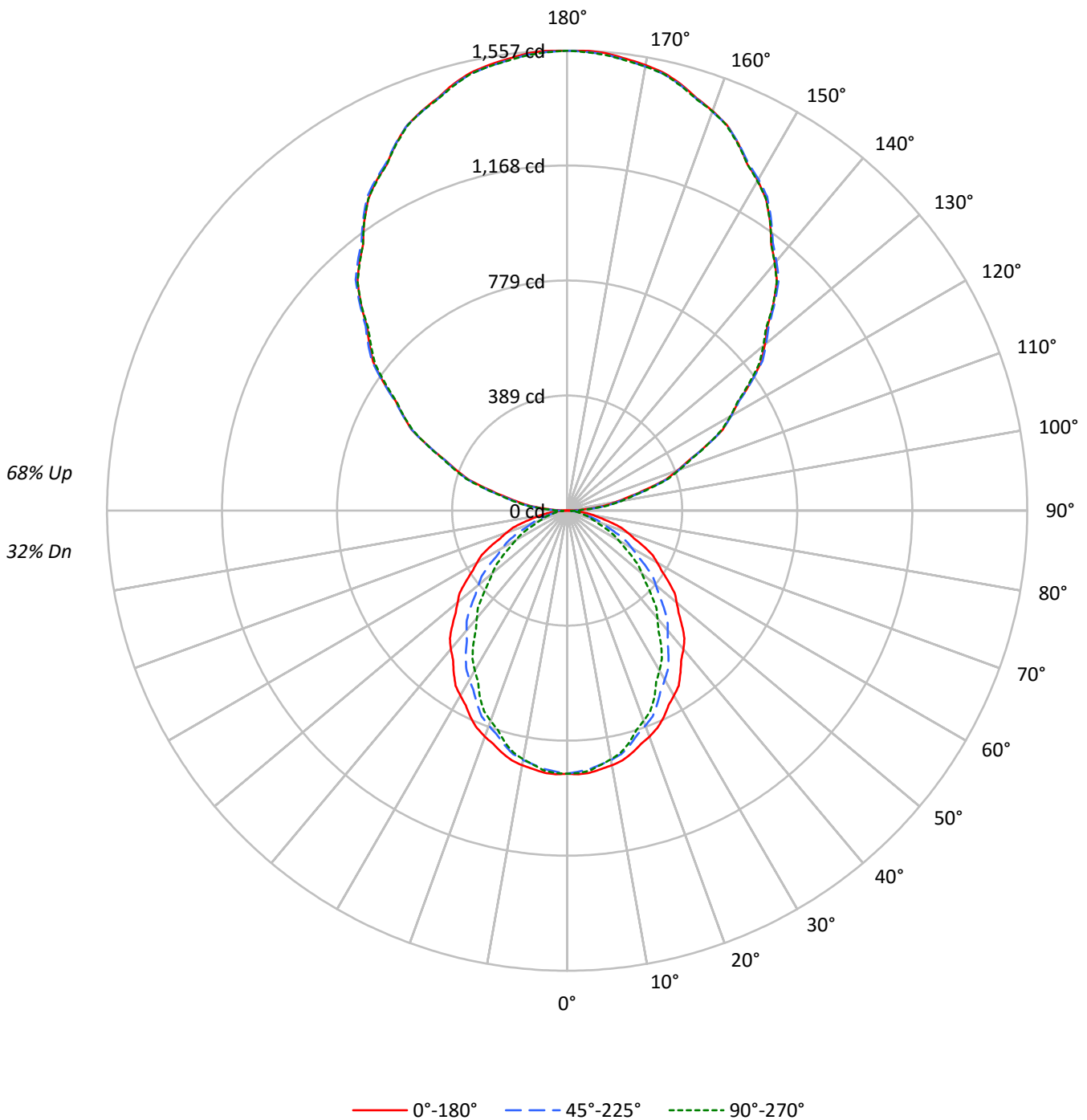
Input Watts (W): 53.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	103	103	103	103	93	93	93	93	73	73	73	56	56	56	39	39	39	39	39	39	32	
1	94	90	86	83	84	81	78	75	64	62	60	49	48	47	35	34	34	34	34	34	27	
2	86	79	73	68	77	71	66	62	57	53	50	43	41	39	31	30	29	29	29	29	23	
3	78	69	62	57	70	63	57	52	50	46	42	38	36	33	28	26	25	25	25	25	20	
4	72	61	54	48	64	55	49	44	45	40	36	34	31	29	25	23	21	21	21	21	17	
5	66	55	47	41	59	49	43	38	40	35	31	31	28	25	23	20	19	19	19	19	15	
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16	16	16	16	13	
7	56	44	36	31	50	40	33	29	32	28	24	25	22	19	19	16	15	15	15	15	12	
8	52	40	32	27	47	36	30	25	30	25	21	23	20	17	17	15	13	13	13	13	11	
9	48	36	29	24	43	33	27	23	27	22	19	21	18	15	16	14	12	12	12	12	10	
10	45	33	26	22	40	30	24	20	25	20	17	20	16	14	15	12	11	11	11	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	1.3
10°-20°	232.6	3.7
20°-30°	334.9	5.3
30°-40°	377.3	6.0
40°-50°	360.9	5.7
50°-60°	295.6	4.7
60°-70°	199.4	3.2
70°-80°	100.3	1.6
80°-90°	31.2	0.5
90°-100°	101.4	1.6
100°-110°	303.4	4.8
110°-120°	516.1	8.2
120°-130°	678.8	10.7
130°-140°	763.0	12.1
140°-150°	750.0	11.9
150°-160°	631.4	10.0
160°-170°	420.3	6.6
170°-180°	147.2	2.3
0°-30°	651.1	10.3
0°-40°	1028.4	16.3
0°-60°	1684.8	26.6
0°-90°	2015.7	31.9
90°-120°	920.9	14.6
90°-150°	3112.8	49.2
90°-180°	4312.0	68.1
0°-180°	6327.4	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	14	29	34	37	6
95°	72	81	90	95	95	81
105°	275	278	288	289	291	295
115°	520	523	521	522	521	514
125°	760	764	762	757	752	678
135°	987	993	993	988	985	760
145°	1197	1199	1203	1202	1197	747
155°	1370	1370	1372	1376	1368	631
165°	1493	1489	1489	1495	1488	421
175°	1553	1548	1548	1554	1546	147
180°	1556	1556	1556	1556	1556	



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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°	14.1	13.2	12.3	11.5	10.7	10.6	11.2	12.0	12.6	13.4	13.5
90°	1.2	4.0	6.7	9.3	12.1	15.2	18.8	22.2	25.8	29.3	30.4
92.5°	29.6	31.4	33.3	35.2	36.9	38.9	40.9	42.9	45.0	46.9	47.8
95°	72.1	74.0	76.0	77.9	79.7	81.8	84.0	86.1	88.3	90.5	91.5
97.5°	128.1	129.5	130.9	132.3	133.7	135.3	136.9	138.4	140.0	141.6	142.8
100°	166.3	167.9	169.5	171.2	172.8	174.3	175.6	177.0	178.3	179.7	180.5
102.5°	210.3	211.2	212.3	213.2	214.1	215.6	217.4	219.1	220.9	222.7	223.6
105°	275.0	275.6	276.2	276.6	277.2	278.7	281.2	283.6	286.1	288.5	288.5
107.5°	350.3	350.7	351.0	351.4	351.7	352.3	353.3	354.3	355.2	356.2	357.1
110°	397.3	397.8	398.4	398.9	399.4	400.0	400.6	401.1	401.6	402.2	403.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	446.2	446.5	446.9	447.1	447.5	447.7	447.8	447.9	448.1	448.2	449.5
115°	519.5	520.4	521.1	522.0	522.8	522.9	522.4	521.9	521.3	520.8	521.0
117.5°	593.4	593.9	594.5	595.0	595.6	595.5	594.7	594.1	593.3	592.7	592.6
120°	639.3	640.9	642.6	644.2	645.8	646.0	644.6	643.3	642.0	640.6	640.3
122.5°	687.3	688.4	689.7	690.9	692.0	692.3	691.5	690.9	690.1	689.5	688.7
125°	760.3	761.2	762.0	762.8	763.6	763.7	763.2	762.7	762.1	761.6	760.5
127.5°	827.8	829.6	831.3	833.0	834.8	835.4	834.8	834.2	833.6	833.0	831.4
130°	872.8	875.0	877.2	879.4	881.6	882.2	881.4	880.6	879.8	878.9	877.9
132.5°	917.8	920.0	922.2	924.4	926.5	927.3	926.7	926.1	925.5	924.9	923.6
135°	986.6	988.2	989.8	991.4	993.1	993.7	993.4	993.2	992.9	992.6	991.6
137.5°	1050.1	1051.4	1052.8	1054.1	1055.6	1056.6	1057.2	1058.0	1058.7	1059.4	1058.2
140°	1094.1	1095.4	1096.8	1098.2	1099.6	1100.3	1100.6	1100.9	1101.2	1101.5	1101.2
142.5°	1134.2	1135.6	1136.9	1138.3	1139.6	1140.6	1141.0	1141.5	1142.0	1142.6	1142.3
145°	1196.7	1197.3	1197.9	1198.4	1198.9	1199.7	1200.4	1201.3	1202.1	1202.9	1202.6
147.5°	1251.5	1252.5	1253.5	1254.5	1255.5	1256.3	1257.1	1257.8	1258.6	1259.3	1259.3
150°	1289.7	1290.2	1290.8	1291.3	1291.8	1292.4	1293.0	1293.5	1294.0	1294.6	1294.6
152.5°	1321.0	1321.7	1322.5	1323.2	1324.0	1324.6	1324.9	1325.2	1325.6	1325.9	1326.3
155°	1370.4	1370.4	1370.4	1370.4	1370.4	1370.6	1370.7	1371.0	1371.3	1371.6	1372.7
157.5°	1412.4	1412.1	1411.7	1411.5	1411.1	1411.1	1411.3	1411.5	1411.7	1411.9	1413.1
160°	1438.8	1438.3	1437.8	1437.2	1436.6	1436.3	1436.3	1436.3	1436.3	1436.3	1437.8
162.5°	1462.3	1461.5	1460.8	1460.0	1459.2	1459.0	1459.2	1459.4	1459.6	1459.8	1461.2
165°	1492.6	1491.8	1491.0	1490.2	1489.4	1488.9	1488.9	1488.9	1488.9	1488.9	1490.5
167.5°	1516.8	1515.7	1514.7	1513.5	1512.5	1512.0	1512.2	1512.5	1512.7	1512.9	1514.6
170°	1530.5	1529.5	1528.3	1527.3	1526.2	1525.6	1525.6	1525.6	1525.6	1525.6	1527.5
172.5°	1541.2	1540.2	1539.1	1538.0	1536.9	1536.3	1536.3	1536.3	1536.3	1536.3	1538.0
175°	1552.6	1551.4	1550.4	1549.3	1548.1	1547.7	1547.7	1547.7	1547.7	1547.7	1549.3
177.5°	1557.2	1556.3	1555.4	1554.5	1553.7	1553.2	1553.2	1553.2	1553.2	1553.2	1554.5
180°	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2



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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°	13.6	13.7	13.8	13.8	13.8	13.8	13.7	13.7
90°	31.5	32.6	33.6	34.5	35.1	35.6	36.1	36.7
92.5°	48.6	49.6	50.4	50.7	50.3	50.0	49.7	49.4
95°	92.7	93.7	94.8	95.4	95.4	95.4	95.4	95.4
97.5°	144.0	145.3	146.6	147.1	147.0	146.9	146.8	146.7
100°	181.3	182.1	182.9	183.6	184.2	184.7	185.3	185.8
102.5°	224.3	225.2	226.0	226.3	226.2	226.1	226.0	225.9
105°	288.5	288.5	288.5	288.8	289.4	289.8	290.4	291.0
107.5°	358.0	358.8	359.7	360.0	359.7	359.3	359.0	358.6
110°	404.4	405.5	406.5	406.8	406.2	405.8	405.2	404.6



TEST NUMBER: P332425-830

CATALOG NUMBER: S123RDIW-S560D1320U830-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	450.7	452.0	453.4	453.9	453.8	453.7	453.6	453.6
115°	521.3	521.6	521.9	521.9	521.6	521.3	521.0	520.8
117.5°	592.6	592.5	592.4	592.0	591.3	590.5	589.7	589.0
120°	640.0	639.8	639.5	639.0	638.6	638.0	637.4	636.9
122.5°	688.1	687.3	686.6	685.9	685.1	684.4	683.6	682.9
125°	759.4	758.4	757.2	756.2	755.1	753.9	752.9	751.8
127.5°	829.9	828.4	826.9	825.5	824.3	823.0	821.8	820.5
130°	876.8	875.7	874.6	873.1	871.2	869.3	867.4	865.5
132.5°	922.3	921.0	919.7	918.3	916.8	915.4	913.9	912.5
135°	990.4	989.4	988.3	987.5	986.9	986.4	985.8	985.3
137.5°	1057.1	1055.9	1054.8	1053.8	1052.7	1051.7	1050.7	1049.6
140°	1100.9	1100.6	1100.3	1099.3	1097.4	1095.4	1093.5	1091.7
142.5°	1142.0	1141.7	1141.4	1140.6	1139.1	1137.6	1136.1	1134.7
145°	1202.3	1202.1	1201.8	1201.2	1200.0	1198.9	1197.9	1196.7
147.5°	1259.3	1259.3	1259.3	1258.6	1257.0	1255.3	1253.7	1252.1
150°	1294.6	1294.6	1294.6	1293.7	1292.1	1290.5	1288.8	1287.2
152.5°	1326.7	1327.2	1327.6	1327.1	1325.7	1324.3	1322.9	1321.4
155°	1373.8	1374.9	1375.9	1375.5	1373.7	1371.8	1369.8	1367.9
157.5°	1414.2	1415.3	1416.5	1416.3	1414.8	1413.2	1411.7	1410.2
160°	1439.1	1440.5	1441.8	1442.0	1440.9	1439.8	1438.7	1437.6
162.5°	1462.5	1464.0	1465.3	1465.1	1463.4	1461.6	1459.9	1458.1
165°	1492.2	1493.8	1495.4	1495.3	1493.5	1491.6	1489.6	1487.7
167.5°	1516.3	1518.0	1519.7	1519.7	1518.0	1516.3	1514.6	1512.9
170°	1529.5	1531.3	1533.2	1533.2	1531.3	1529.5	1527.5	1525.6
172.5°	1539.7	1541.4	1543.1	1543.0	1541.2	1539.2	1537.3	1535.4
175°	1550.9	1552.6	1554.2	1554.0	1552.1	1550.2	1548.3	1546.4
177.5°	1555.9	1557.2	1558.5	1558.4	1556.8	1555.3	1553.8	1552.3
180°	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2

(END OF REPORT)