

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: P332428-830

Luminaire Tested: **S123RDIW-S560D1535U830-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332428-830
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: S123RDIW-S560D1535U830-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1535 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7800.3 lumens
Efficiency: N/A
Efficacy: 128.7 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

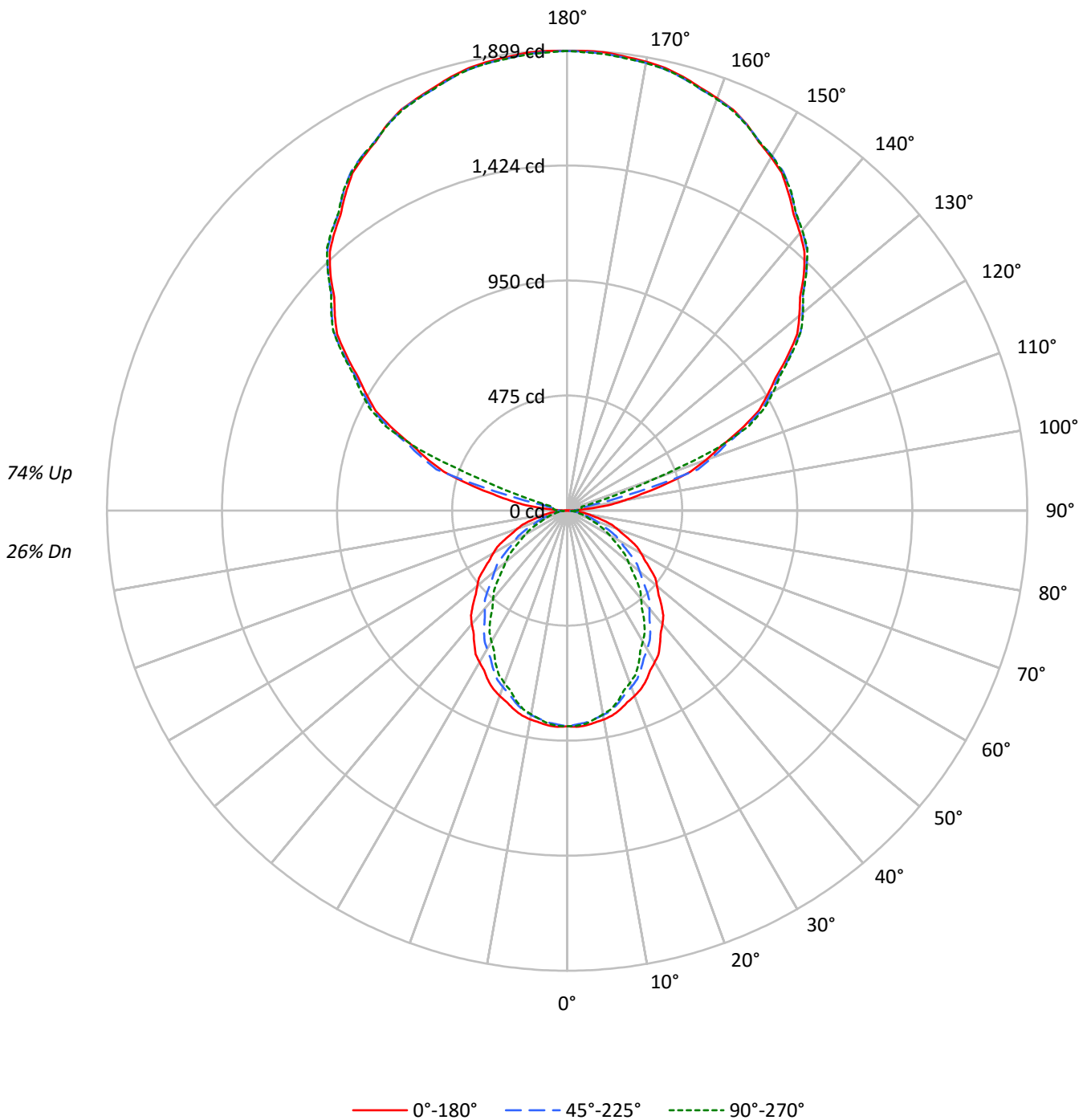
Input Watts (W): 60.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	101	101	101	101	90	90	90	90	70	70	70	51	51	51	34	34	34	26
1	93	88	85	81	82	79	76	73	61	59	57	45	44	43	30	30	29	22
2	84	77	72	67	75	69	64	60	54	51	48	40	38	36	27	26	25	19
3	77	68	61	56	68	61	55	50	48	44	40	35	33	31	24	22	21	16
4	70	60	53	47	63	54	48	43	42	38	34	31	29	26	21	20	18	14
5	65	54	46	40	57	48	42	37	38	33	30	28	25	23	19	17	16	12
6	59	48	40	35	53	43	36	32	34	29	26	25	22	20	18	16	14	11
7	55	43	36	30	49	39	32	28	31	26	23	23	20	17	16	14	13	10
8	51	39	32	27	45	35	29	24	28	23	20	21	18	16	15	13	11	9
9	47	36	28	24	42	32	26	22	26	21	18	19	16	14	14	12	10	8
10	44	32	26	21	39	29	23	19	23	19	16	18	15	13	13	11	9	7

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	1.1
10°-20°	232.6	3.0
20°-30°	334.9	4.3
30°-40°	377.3	4.8
40°-50°	360.9	4.6
50°-60°	295.6	3.8
60°-70°	199.4	2.6
70°-80°	100.3	1.3
80°-90°	31.8	0.4
90°-100°	69.0	0.9
100°-110°	328.6	4.2
110°-120°	789.4	10.1
120°-130°	1005.2	12.9
130°-140°	1074.1	13.8
140°-150°	1004.4	12.9
150°-160°	810.1	10.4
160°-170°	522.9	6.7
170°-180°	180.2	2.3
0°-30°	651.1	8.3
0°-40°	1028.4	13.2
0°-60°	1684.8	21.6
0°-90°	2016.4	25.9
90°-120°	1187.0	15.2
90°-150°	4270.6	54.7
90°-180°	5784.0	74.2
0°-180°	7800.3	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	16	34	39	42	6
95°	86	32	44	53	54	106
105°	420	428	309	73	62	445
115°	788	796	809	822	829	777
125°	1110	1121	1127	1130	1133	991
135°	1382	1391	1396	1400	1396	1064
145°	1595	1604	1608	1610	1611	998
155°	1757	1754	1756	1762	1754	809
165°	1853	1849	1847	1857	1849	523
175°	1897	1890	1891	1900	1890	180
180°	1897	1897	1897	1897	1897	



TEST NUMBER: P332428-830

CATALOG NUMBER: S123RDIW-S560D1535U830-4F0-1E-UDD-F

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	13.4	12.5	11.8	11.0	11.0	11.9	12.6	13.5	14.2	14.4
90°	1.4	4.5	7.6	10.8	13.9	17.5	21.6	25.6	29.8	33.8	35.1
92.5°	26.2	25.4	24.4	23.6	22.7	23.8	26.9	30.0	33.0	36.1	38.1
95°	86.0	73.1	60.3	47.4	34.6	29.9	33.4	36.8	40.2	43.6	45.9
97.5°	172.8	167.0	161.3	155.4	149.7	135.5	113.0	90.5	68.0	45.3	47.9
100°	238.2	244.4	250.6	256.9	263.2	241.9	193.0	144.2	95.4	46.5	49.0
102.5°	312.5	317.1	321.6	326.0	330.5	306.1	252.8	199.4	146.1	92.7	84.9
105°	419.9	423.4	426.8	430.3	433.7	421.3	393.1	365.0	336.8	308.6	253.2
107.5°	533.2	535.9	538.7	541.5	544.2	547.8	552.2	556.8	561.2	565.6	525.0
110°	608.7	611.2	613.7	616.2	618.8	621.7	625.2	628.6	632.1	635.5	625.2



TEST NUMBER: P332428-830

CATALOG NUMBER: S123RDIW-S560D1535U830-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	680.9	683.2	685.4	687.7	689.8	692.8	696.2	699.6	703.0	706.5	706.7
115°	787.7	789.6	791.5	793.3	795.2	797.6	800.4	803.1	806.0	808.8	811.9
117.5°	891.1	893.4	895.7	898.1	900.4	902.3	903.7	905.1	906.5	908.0	910.5
120°	955.4	958.2	961.0	963.8	966.7	968.6	969.4	970.3	971.3	972.2	974.8
122.5°	1020.8	1023.0	1025.4	1027.7	1030.0	1031.8	1032.9	1034.2	1035.3	1036.5	1038.3
125°	1110.3	1112.9	1115.4	1117.9	1120.4	1122.3	1123.5	1124.7	1126.1	1127.3	1127.9
127.5°	1197.1	1199.7	1202.2	1204.7	1207.2	1209.2	1210.7	1212.2	1213.7	1215.2	1216.2
130°	1251.2	1253.8	1256.3	1258.8	1261.3	1263.2	1264.4	1265.6	1267.0	1268.2	1269.4
132.5°	1303.2	1305.6	1308.2	1310.6	1313.2	1314.9	1315.9	1316.9	1317.9	1318.9	1320.1
135°	1382.3	1384.2	1386.1	1388.0	1389.9	1391.4	1392.6	1393.9	1395.2	1396.4	1397.3
137.5°	1449.9	1452.4	1454.7	1457.1	1459.4	1461.0	1461.7	1462.4	1463.1	1463.8	1465.3
140°	1495.1	1496.9	1498.8	1500.7	1502.6	1503.9	1504.9	1505.8	1506.7	1507.7	1509.0
142.5°	1536.7	1538.6	1540.5	1542.4	1544.3	1545.7	1546.6	1547.6	1548.5	1549.4	1550.4
145°	1595.1	1597.2	1599.5	1601.7	1603.8	1605.2	1605.9	1606.5	1607.1	1607.8	1608.4
147.5°	1650.0	1651.5	1652.9	1654.4	1655.8	1656.8	1657.5	1658.1	1658.7	1659.3	1660.0
150°	1683.9	1684.8	1685.7	1686.7	1687.6	1688.4	1689.0	1689.7	1690.3	1690.9	1691.5
152.5°	1714.3	1714.8	1715.1	1715.6	1716.1	1716.5	1716.8	1717.2	1717.6	1718.0	1719.1
155°	1757.1	1756.5	1755.9	1755.3	1754.6	1754.4	1754.8	1755.1	1755.4	1755.7	1757.3
157.5°	1790.4	1790.4	1790.3	1790.2	1790.2	1790.0	1789.6	1789.3	1789.0	1788.7	1790.5
160°	1810.7	1810.3	1810.1	1809.8	1809.4	1809.1	1808.8	1808.5	1808.2	1807.9	1809.8
162.5°	1829.9	1829.0	1828.2	1827.4	1826.6	1826.0	1825.7	1825.4	1825.0	1824.8	1826.9
165°	1852.9	1852.0	1851.1	1850.1	1849.2	1848.6	1848.2	1847.9	1847.7	1847.3	1849.8
167.5°	1870.9	1869.7	1868.5	1867.3	1866.0	1865.4	1865.4	1865.4	1865.4	1865.4	1867.8
170°	1881.1	1879.9	1878.6	1877.4	1876.1	1875.5	1875.5	1875.5	1875.5	1875.5	1878.0
172.5°	1887.9	1886.4	1884.9	1883.4	1881.9	1881.2	1881.5	1881.8	1882.0	1882.3	1884.8
175°	1896.6	1895.1	1893.5	1892.0	1890.4	1889.7	1890.1	1890.4	1890.6	1891.0	1893.2
177.5°	1898.8	1897.6	1896.4	1895.2	1893.9	1893.4	1893.7	1893.9	1894.1	1894.4	1896.4
180°	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6



TEST NUMBER: P332428-830

CATALOG NUMBER: S123RDIW-S560D1535U830-4F0-1E-UDD-F

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°	14.5	14.6	14.8	14.8	14.8	14.8	14.8	14.8
90°	36.3	37.6	38.8	39.8	40.4	41.0	41.7	42.2
92.5°	40.1	42.1	44.1	45.2	45.6	46.0	46.4	46.8
95°	48.1	50.2	52.4	53.5	53.5	53.5	53.5	53.5
97.5°	50.4	52.9	55.4	56.8	57.1	57.4	57.8	58.1
100°	51.5	54.0	56.6	58.0	58.2	58.5	58.9	59.2
102.5°	77.2	69.5	61.6	58.1	58.6	59.2	59.8	60.3
105°	197.7	142.3	86.9	59.5	60.1	60.8	61.4	62.0
107.5°	484.3	443.7	403.0	361.8	320.1	278.2	236.5	194.7
110°	614.8	604.5	594.2	566.6	521.8	477.0	432.3	387.5



TEST NUMBER: P332428-830

CATALOG NUMBER: S123RDIW-S560D1535U830-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	706.9	707.1	707.3	702.7	693.1	683.7	674.3	664.8
115°	815.1	818.2	821.3	823.5	824.8	826.0	827.3	828.6
117.5°	913.0	915.5	918.0	919.5	919.6	919.9	920.2	920.4
120°	977.3	979.8	982.3	983.5	983.5	983.5	983.5	983.5
122.5°	1040.0	1041.8	1043.6	1044.5	1044.8	1045.0	1045.3	1045.6
125°	1128.5	1129.2	1129.7	1130.4	1131.1	1131.6	1132.3	1132.9
127.5°	1217.2	1218.2	1219.2	1219.4	1218.8	1218.1	1217.5	1216.9
130°	1270.6	1272.0	1273.2	1273.5	1272.9	1272.2	1271.6	1271.0
132.5°	1321.4	1322.7	1323.9	1324.1	1323.2	1322.4	1321.4	1320.6
135°	1398.3	1399.2	1400.1	1400.1	1399.2	1398.3	1397.3	1396.4
137.5°	1466.8	1468.3	1469.8	1470.2	1469.6	1469.0	1468.3	1467.7
140°	1510.2	1511.5	1512.7	1513.1	1512.4	1511.8	1511.2	1510.5
142.5°	1551.4	1552.5	1553.4	1553.5	1552.7	1551.7	1550.9	1550.0
145°	1609.0	1609.7	1610.2	1610.6	1610.6	1610.6	1610.6	1610.6
147.5°	1660.6	1661.2	1661.9	1661.4	1660.0	1658.6	1657.1	1655.7
150°	1692.1	1692.8	1693.4	1693.3	1692.3	1691.4	1690.5	1689.5
152.5°	1720.2	1721.4	1722.5	1722.3	1720.9	1719.4	1718.0	1716.6
155°	1758.9	1760.4	1762.0	1761.8	1759.9	1758.0	1756.1	1754.4
157.5°	1792.4	1794.3	1796.2	1795.9	1793.5	1791.0	1788.6	1786.1
160°	1811.7	1813.5	1815.3	1815.2	1813.0	1810.8	1808.6	1806.5
162.5°	1829.0	1831.2	1833.2	1833.3	1831.5	1829.5	1827.6	1825.6
165°	1852.3	1854.8	1857.4	1857.5	1855.3	1853.1	1850.9	1848.7
167.5°	1870.4	1872.8	1875.4	1875.4	1872.8	1870.4	1867.8	1865.4
170°	1880.5	1883.0	1885.6	1885.6	1883.0	1880.5	1878.0	1875.5
172.5°	1887.3	1889.8	1892.2	1892.2	1889.4	1886.7	1883.9	1881.1
175°	1895.4	1897.5	1899.8	1899.6	1897.1	1894.6	1892.1	1889.6
177.5°	1898.4	1900.4	1902.4	1902.1	1899.6	1897.1	1894.6	1892.2
180°	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6

(END OF REPORT)