

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: P332146-830

Luminaire Tested: **S123DIW-S560D1535U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332146-830
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: S123DIW-S560D1535U830-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1535 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8016.4 lumens
Efficiency: N/A
Efficacy: 132.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

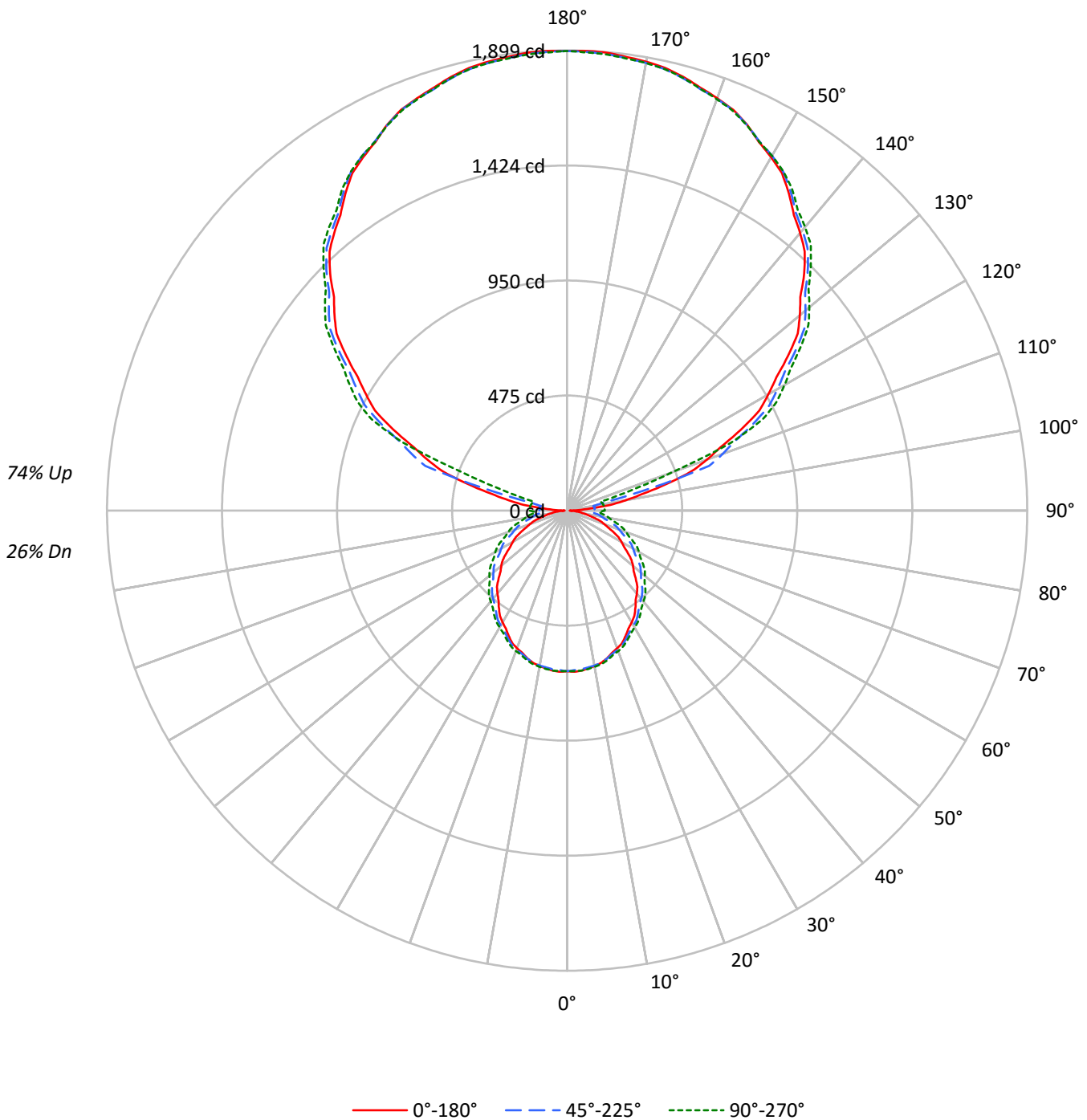
Input Watts (W): 60.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332146-830

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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	92	87	83	80	82	78	75	72	60	58	56	44	42	41	29	28	27	20
2	83	76	70	65	74	68	63	58	52	49	46	38	36	34	25	24	23	17
3	76	66	59	54	67	59	53	48	46	42	38	34	31	28	22	20	19	14
4	69	59	51	45	61	52	46	41	41	36	32	30	27	24	20	18	16	12
5	63	52	44	38	56	46	40	35	36	31	28	26	23	21	17	16	14	10
6	58	46	38	33	52	42	35	30	32	27	24	24	20	18	16	14	12	9
7	54	42	34	29	48	37	31	26	29	24	21	22	18	16	14	12	11	8
8	50	38	30	25	44	34	27	23	26	22	18	20	16	14	13	11	10	7
9	46	34	27	22	41	31	24	20	24	19	16	18	15	12	12	10	9	6
10	43	31	24	20	38	28	22	18	22	18	14	17	13	11	11	9	8	6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7134	7134	7134
5°	7156	6954	6959
10°	7093	6795	6761
15°	7001	6612	6544
20°	6871	6405	6306
25°	6709	6166	6056
30°	6544	5951	5803
35°	6359	5723	5601
40°	6181	5515	5382
45°	5986	5318	5210
50°	5793	5121	5019
55°	5578	4919	4848
60°	5369	4716	4670
65°	5156	4499	4462
70°	4837	4254	4245
75°	4430	3973	4029
80°	3958	3698	3779
85°	3521	3508	3633



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.8	0.8
10°-20°	179.1	2.2
20°-30°	267.9	3.3
30°-40°	319.9	4.0
40°-50°	334.7	4.2
50°-60°	314.1	3.9
60°-70°	262.3	3.3
70°-80°	187.7	2.3
80°-90°	117.2	1.5
90°-100°	139.2	1.7
100°-110°	380.3	4.7
110°-120°	823.9	10.3
120°-130°	1024.9	12.8
130°-140°	1082.9	13.5
140°-150°	1006.2	12.6
150°-160°	810.2	10.1
160°-170°	522.9	6.5
170°-180°	180.2	2.2
0°-30°	509.8	6.4
0°-40°	829.7	10.4
0°-60°	1478.6	18.4
0°-90°	2045.9	25.5
90°-120°	1343.3	16.8
90°-150°	4457.4	55.6
90°-180°	5971.0	74.5
0°-180°	8016.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	663	663	663	663	663	
5°	664	662	658	663	663	63
15°	632	634	633	640	640	178
25°	570	577	580	589	589	263
35°	491	502	512	522	526	307
45°	401	419	437	450	456	310
55°	306	330	356	375	381	274
65°	212	240	272	292	300	209
75°	115	149	185	208	217	123
85°	35	72	110	133	142	37
90°	11	61	115	144	156	10
95°	94	69	115	146	155	112
105°	426	451	363	147	143	451
115°	791	810	847	877	890	781
125°	1112	1125	1150	1168	1176	993
135°	1384	1392	1405	1421	1422	1065
145°	1596	1605	1608	1616	1619	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	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8
2.5°	665.7	665.3	665.0	664.5	664.1	663.5	662.4	661.4	660.3	659.3	660.3
5°	663.5	663.2	662.9	662.6	662.2	661.6	660.6	659.7	658.7	657.7	659.0
7.5°	657.0	657.0	657.1	657.2	657.3	656.9	655.9	655.0	654.0	653.1	654.7
10°	651.3	651.6	651.9	652.2	652.5	652.3	651.5	650.7	649.9	649.1	650.7
12.5°	644.3	644.8	645.3	645.6	646.1	646.1	645.5	645.0	644.4	643.9	645.4
15°	631.8	632.3	632.7	633.2	633.7	633.9	633.7	633.5	633.4	633.2	634.8
17.5°	615.9	616.8	617.8	618.8	619.7	620.2	620.1	620.0	620.0	619.9	621.3
20°	604.4	605.3	606.2	607.2	608.1	608.8	609.2	609.4	609.7	610.1	611.5
22.5°	592.2	593.1	594.1	595.1	596.1	596.7	597.2	597.7	598.1	598.5	600.4
25°	570.4	572.0	573.6	575.2	576.8	577.9	578.3	578.8	579.3	579.8	581.8
27.5°	548.5	550.3	552.1	553.9	555.7	557.1	558.2	559.2	560.2	561.3	563.1
30°	532.8	534.9	537.0	539.1	541.2	542.9	544.1	545.4	546.7	548.0	550.0
32.5°	515.5	517.8	520.2	522.5	524.9	526.9	528.6	530.2	531.9	533.6	535.6
35°	491.0	493.5	496.1	498.7	501.2	503.6	505.7	507.7	509.8	511.9	514.3
37.5°	465.0	467.9	470.7	473.6	476.5	479.3	481.8	484.4	486.9	489.6	492.3
40°	447.6	450.5	453.5	456.3	459.2	462.2	465.4	468.6	471.8	475.0	477.8
42.5°	428.6	432.2	435.6	439.1	442.7	446.1	449.5	452.8	456.2	459.5	462.5
45°	401.4	405.3	409.2	413.0	416.8	420.8	424.8	428.8	432.8	436.8	439.9
47.5°	373.0	377.4	381.7	386.1	390.4	394.9	399.5	404.1	408.7	413.3	416.7
50°	354.5	359.0	363.4	368.0	372.5	377.2	382.2	387.2	392.1	397.1	400.8
52.5°	334.9	339.6	344.4	349.1	353.8	359.0	364.5	369.9	375.4	381.0	384.7
55°	306.1	311.4	316.7	322.0	327.3	332.8	338.7	344.4	350.2	355.9	360.2
57.5°	278.1	283.6	289.2	294.6	300.2	306.1	312.5	318.8	325.1	331.4	335.7
60°	258.4	264.3	270.0	275.8	281.5	287.8	294.4	301.0	307.5	314.1	318.6
62.5°	240.0	245.9	251.8	257.7	263.6	270.0	277.0	284.0	291.0	297.9	302.4
65°	211.5	217.8	224.0	230.4	236.6	243.3	250.3	257.3	264.4	271.5	276.3
67.5°	182.7	189.4	196.0	202.6	209.2	216.1	223.4	230.5	237.7	244.9	250.2
70°	162.5	169.4	176.3	183.1	190.0	197.4	205.0	212.7	220.5	228.2	233.3
72.5°	143.9	150.9	157.8	164.7	171.5	179.0	186.9	194.9	202.8	210.8	216.1
75°	114.8	122.3	129.9	137.4	145.0	152.8	160.8	168.8	176.8	184.8	190.1
77.5°	89.4	97.0	104.6	112.2	119.8	127.6	135.7	143.8	151.9	160.0	165.6
80°	71.4	79.4	87.2	95.1	102.9	111.0	119.3	127.7	136.1	144.4	149.9
82.5°	55.9	63.9	71.8	79.8	87.8	96.0	104.5	113.0	121.5	130.0	135.4
85°	35.3	43.4	51.5	59.5	67.5	75.7	84.3	92.7	101.2	109.7	115.2
87.5°	19.5	28.1	36.8	45.3	53.9	62.8	71.7	80.8	89.7	98.8	104.4
90°	10.8	21.8	32.8	43.7	54.8	66.4	78.6	90.9	103.1	115.4	122.2
92.5°	35.1	41.2	47.4	53.6	59.9	68.5	79.6	90.8	101.9	113.0	120.4
95°	93.9	87.3	80.8	74.2	67.6	69.9	81.2	92.6	103.9	115.2	122.3
97.5°	179.8	179.7	179.6	179.5	179.4	171.8	156.7	141.8	126.7	111.7	118.9
100°	244.6	256.0	267.4	278.8	290.2	275.2	233.8	192.3	150.8	109.3	116.5
102.5°	318.5	327.6	336.7	345.8	355.0	336.5	290.4	244.3	198.2	152.0	148.8
105°	425.7	433.0	440.3	447.6	454.9	447.9	426.6	405.3	384.0	362.8	311.8
107.5°	538.1	544.1	550.2	556.2	562.2	570.7	581.7	592.8	603.7	614.7	578.3
110°	613.0	618.5	623.9	629.2	634.6	642.2	652.1	661.9	671.8	681.7	675.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	685.2	689.8	694.5	699.1	703.7	710.9	720.5	730.1	739.6	749.2	753.5
115°	791.3	795.1	798.9	802.7	806.5	812.7	821.3	829.9	838.5	847.1	854.0
117.5°	894.6	898.1	901.5	905.1	908.6	913.8	920.7	927.5	934.3	941.2	947.5
120°	958.3	961.9	965.4	969.1	972.7	977.7	983.9	990.1	996.4	1002.6	1008.8
122.5°	1023.6	1026.3	1029.1	1031.8	1034.5	1039.1	1045.3	1051.5	1057.7	1063.9	1069.3
125°	1112.5	1115.0	1117.6	1120.0	1122.6	1126.7	1132.7	1138.6	1144.4	1150.4	1154.3
127.5°	1199.3	1201.6	1204.0	1206.4	1208.7	1212.6	1218.0	1223.2	1228.6	1234.0	1238.1
130°	1253.4	1255.7	1258.1	1260.5	1262.8	1266.2	1270.6	1275.2	1279.6	1284.0	1288.4
132.5°	1304.7	1307.2	1309.7	1312.1	1314.6	1317.6	1321.2	1324.7	1328.3	1331.9	1336.1
135°	1383.7	1385.4	1387.2	1388.9	1390.6	1393.0	1396.0	1399.0	1402.0	1405.0	1408.9
137.5°	1451.2	1453.5	1455.8	1458.0	1460.3	1462.3	1463.9	1465.6	1467.3	1469.0	1473.0
140°	1495.7	1497.6	1499.5	1501.4	1503.3	1505.0	1506.4	1507.8	1509.2	1510.6	1514.3
142.5°	1537.5	1539.3	1541.0	1542.8	1544.5	1545.9	1546.9	1547.9	1549.0	1550.0	1553.1
145°	1595.8	1597.8	1599.9	1601.9	1603.9	1605.2	1605.9	1606.5	1607.1	1607.8	1609.7
147.5°	1650.0	1651.5	1652.9	1654.4	1655.8	1656.8	1657.5	1658.1	1658.7	1659.3	1660.4
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



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8
2.5°	661.4	662.4	663.5	663.9	663.7	663.6	663.5	663.4
5°	660.3	661.6	662.9	663.5	663.3	663.1	663.0	662.8
7.5°	656.3	657.9	659.6	660.3	660.1	659.9	659.7	659.5
10°	652.3	653.9	655.5	656.1	655.8	655.5	655.2	654.9
12.5°	646.9	648.3	649.8	650.4	650.1	649.7	649.4	649.1
15°	636.4	638.0	639.6	640.4	640.2	640.0	639.9	639.7
17.5°	622.8	624.2	625.7	626.3	626.0	625.8	625.7	625.4
20°	613.0	614.4	615.9	616.7	616.8	617.0	617.2	617.3
22.5°	602.2	604.1	605.9	606.7	606.6	606.5	606.4	606.3
25°	583.9	586.1	588.1	589.2	589.2	589.2	589.2	589.2
27.5°	564.9	566.7	568.4	569.5	569.6	569.7	569.9	570.0
30°	551.9	553.7	555.7	556.7	556.7	556.7	556.7	556.7
32.5°	537.6	539.7	541.8	543.0	543.4	543.8	544.1	544.5
35°	516.7	519.2	521.5	523.0	523.7	524.3	525.0	525.7
37.5°	494.9	497.7	500.4	502.1	502.6	503.0	503.6	504.1
40°	480.5	483.2	486.0	487.7	488.3	489.0	489.6	490.2
42.5°	465.4	468.4	471.5	473.3	474.3	475.1	476.1	476.9
45°	442.9	445.9	449.0	451.2	452.4	453.7	455.1	456.3
47.5°	420.2	423.6	427.0	429.2	430.2	431.2	432.3	433.2
50°	404.4	408.2	411.9	414.2	415.4	416.5	417.6	418.8
52.5°	388.6	392.4	396.2	398.8	400.2	401.5	402.9	404.4
55°	364.6	368.9	373.2	376.1	377.4	378.6	379.9	381.3
57.5°	340.2	344.5	348.8	351.8	353.3	354.8	356.3	357.8
60°	323.1	327.5	332.1	335.2	337.0	338.7	340.4	342.2
62.5°	306.9	311.4	315.8	319.0	320.6	322.2	323.9	325.5
65°	281.1	285.9	290.8	294.0	295.6	297.2	298.8	300.4
67.5°	255.4	260.7	266.0	269.3	270.6	271.9	273.3	274.7
70°	238.5	243.6	248.7	252.0	253.6	255.2	256.8	258.4
72.5°	221.3	226.6	231.9	235.4	237.0	238.6	240.2	241.8
75°	195.4	200.8	206.0	209.6	211.5	213.5	215.4	217.4
77.5°	171.2	176.7	182.3	185.9	187.4	188.8	190.3	191.8
80°	155.3	160.8	166.3	169.8	171.4	173.0	174.6	176.2
82.5°	140.9	146.3	151.7	155.3	156.9	158.5	160.1	161.7
85°	120.6	126.1	131.6	135.1	136.7	138.3	139.9	141.5
87.5°	110.2	115.8	121.6	125.3	127.1	128.8	130.4	132.2
90°	128.8	135.5	142.2	146.7	148.9	151.2	153.4	155.6
92.5°	127.7	135.1	142.3	146.9	148.8	150.6	152.5	154.4
95°	129.5	136.7	143.8	148.2	149.8	151.4	153.1	154.7
97.5°	126.2	133.6	140.8	145.4	147.3	149.2	151.2	153.1
100°	123.7	130.8	138.0	142.5	144.4	146.3	148.3	150.1
102.5°	145.6	142.3	139.1	138.6	140.7	142.9	145.1	147.2
105°	260.9	209.9	159.0	134.6	136.7	138.7	140.8	142.9
107.5°	542.1	505.7	469.3	430.9	390.6	350.2	309.9	269.6
110°	669.4	663.3	657.0	632.3	588.7	545.3	501.7	458.3



TEST NUMBER: P332146-830

CATALOG NUMBER: S123DIW-S560D1535U830-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	757.7	762.0	766.2	764.3	756.2	748.2	740.2	732.1
115°	861.0	868.0	875.1	879.8	882.3	884.9	887.4	889.9
117.5°	953.9	960.2	966.5	970.4	971.9	973.5	975.0	976.5
120°	1015.0	1021.2	1027.4	1031.0	1032.2	1033.3	1034.4	1035.6
122.5°	1074.6	1079.9	1085.2	1088.5	1090.0	1091.3	1092.7	1094.1
125°	1158.4	1162.3	1166.4	1169.2	1171.0	1172.7	1174.5	1176.2
127.5°	1242.4	1246.5	1250.7	1253.0	1253.5	1254.0	1254.4	1254.9
130°	1292.7	1296.9	1301.3	1303.6	1303.9	1304.3	1304.6	1305.0
132.5°	1340.2	1344.4	1348.6	1350.8	1351.0	1351.2	1351.4	1351.6
135°	1412.7	1416.5	1420.4	1422.2	1422.1	1421.9	1421.8	1421.6
137.5°	1477.1	1481.1	1485.1	1487.2	1487.4	1487.6	1487.7	1487.9
140°	1518.0	1521.5	1525.2	1527.2	1527.3	1527.5	1527.7	1527.9
142.5°	1556.3	1559.4	1562.6	1564.1	1564.1	1564.0	1564.0	1563.9
145°	1611.6	1613.5	1615.4	1616.6	1617.3	1618.0	1618.6	1619.3
147.5°	1661.3	1662.4	1663.4	1663.5	1662.6	1661.7	1660.9	1660.0
150°	1692.1	1692.8	1693.4	1693.4	1692.8	1692.1	1691.6	1690.9
152.5°	1720.2	1721.4	1722.5	1722.3	1721.0	1719.6	1718.3	1716.8
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)