

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: P332142

Luminaire Tested: **S123DIW-S560D1320U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332142
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-S560D1320U835-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7600.9 lumens
Efficiency: N/A
Efficacy: 141.3 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Indirect

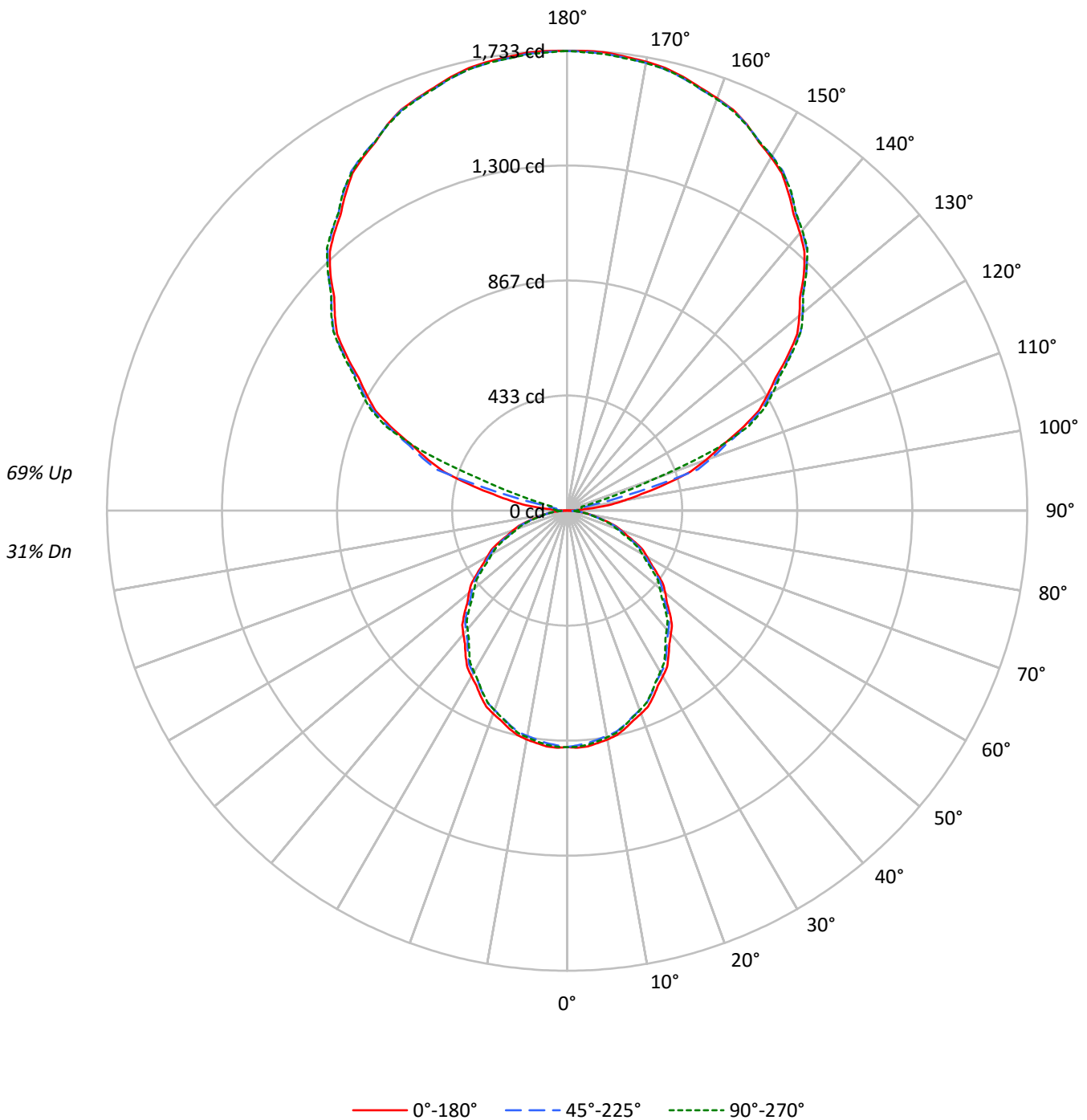
Input Watts (W): 53.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	103	103	103	103	92	92	92	92	73	73	73	55	55	55	38	38	38	31
1	93	89	85	82	84	80	77	74	63	61	59	48	47	45	34	33	32	26
2	85	78	72	67	76	70	65	61	55	52	49	42	40	38	30	28	27	21
3	77	68	61	56	69	62	56	51	49	45	41	37	34	32	26	24	23	18
4	71	60	53	47	63	54	48	43	43	39	35	33	30	27	23	21	20	16
5	65	54	46	40	58	48	42	37	39	34	30	30	26	23	21	19	17	13
6	60	48	40	34	53	43	37	32	35	30	26	27	23	20	19	17	15	12
7	55	43	35	30	49	39	32	28	31	26	23	24	21	18	17	15	13	10
8	51	39	32	26	46	35	29	24	29	24	20	22	19	16	16	14	12	9
9	47	36	28	23	42	32	26	22	26	21	18	20	17	14	15	12	11	8
10	44	32	25	21	40	30	23	19	24	19	16	19	15	13	14	11	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9590	9590	9590
5°	9634	9502	9568
10°	9570	9419	9477
15°	9458	9313	9331
20°	9328	9160	9170
25°	9152	8980	8961
30°	8959	8779	8712
35°	8757	8566	8456
40°	8546	8331	8202
45°	8315	8115	7917
50°	8081	7850	7633
55°	7777	7576	7345
60°	7470	7255	7025
65°	7200	6907	6691
70°	6798	6508	6219
75°	6213	5989	5735
80°	5604	5368	5318
85°	4915	4730	4545



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.9	1.1
10°-20°	237.0	3.1
20°-30°	350.0	4.6
30°-40°	408.9	5.4
40°-50°	411.1	5.4
50°-60°	361.1	4.8
60°-70°	269.0	3.5
70°-80°	153.3	2.0
80°-90°	48.8	0.6
90°-100°	62.9	0.8
100°-110°	299.9	3.9
110°-120°	720.3	9.5
120°-130°	917.3	12.1
130°-140°	980.1	12.9
140°-150°	916.5	12.1
150°-160°	739.3	9.7
160°-170°	477.1	6.3
170°-180°	164.4	2.2
0°-30°	670.9	8.8
0°-40°	1079.8	14.2
0°-60°	1851.9	24.4
0°-90°	2323.0	30.6
90°-120°	1083.2	14.3
90°-150°	3897.1	51.3
90°-180°	5278.0	69.4
0°-180°	7600.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	891	891	891	891	891	
5°	892	888	879	887	886	84
15°	849	845	836	841	837	239
25°	771	766	756	757	754	355
35°	666	662	652	647	644	417
45°	546	543	533	524	520	421
55°	414	413	404	396	391	371
65°	283	279	271	265	263	279
75°	149	146	144	140	138	160
85°	40	38	38	37	37	44
90°	1	14	31	36	39	6
95°	78	29	40	48	49	97
105°	383	390	282	67	57	406
115°	719	727	738	750	756	709
125°	1013	1023	1029	1031	1034	905
135°	1261	1269	1274	1278	1274	971
145°	1456	1464	1467	1470	1470	911
155°	1603	1601	1602	1608	1601	738
165°	1691	1687	1686	1695	1687	478
175°	1731	1725	1726	1734	1724	165
180°	1731	1731	1731	1731	1731	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	890.9	890.9	890.9	890.9	890.9	890.9	890.9	890.9	890.9	890.9	890.9
2.5°	893.9	893.4	892.9	892.3	891.8	890.7	889.2	887.7	886.3	884.8	886.1
5°	891.6	890.8	889.9	889.1	888.2	886.9	885.0	883.1	881.3	879.4	881.1
7.5°	882.9	882.1	881.2	880.4	879.5	878.1	876.2	874.2	872.3	870.4	871.9
10°	875.6	874.7	873.9	873.0	872.2	870.6	868.4	866.2	864.0	861.8	863.3
12.5°	865.8	865.0	864.3	863.6	862.9	861.5	859.4	857.3	855.3	853.2	854.3
15°	848.7	848.1	847.4	846.7	846.0	844.6	842.4	840.2	837.9	835.7	837.1
17.5°	829.0	828.1	827.2	826.3	825.4	823.9	821.7	819.5	817.3	815.0	816.0
20°	814.3	813.3	812.2	811.2	810.2	808.6	806.4	804.2	801.9	799.7	800.4
22.5°	797.7	796.7	795.7	794.7	793.6	792.0	789.8	787.6	785.4	783.2	783.7
25°	770.6	769.6	768.6	767.6	766.5	764.9	762.7	760.5	758.3	756.1	756.2
27.5°	741.7	740.7	739.7	738.7	737.7	736.0	733.6	731.3	728.9	726.5	726.6
30°	720.8	720.0	719.1	718.3	717.4	715.8	713.4	711.0	708.7	706.3	706.3
32.5°	700.0	698.9	697.7	696.6	695.5	694.0	692.2	690.3	688.5	686.7	685.7
35°	666.4	665.4	664.4	663.4	662.4	660.7	658.5	656.3	654.1	651.9	650.9
37.5°	632.1	630.8	629.5	628.2	626.9	625.2	622.9	620.7	618.4	616.2	615.0
40°	608.2	607.2	606.2	605.2	604.1	602.4	600.0	597.7	595.3	592.9	591.5
42.5°	584.3	583.2	582.0	580.8	579.7	577.9	575.5	573.2	570.8	568.4	567.0
45°	546.2	545.5	544.8	544.1	543.4	542.0	539.8	537.6	535.4	533.1	531.1
47.5°	508.3	507.3	506.4	505.4	504.4	502.8	500.8	498.7	496.6	494.5	492.5
50°	482.6	481.7	480.9	480.0	479.2	477.7	475.4	473.2	471.0	468.8	466.9
52.5°	455.6	455.0	454.5	453.9	453.3	451.8	449.5	447.2	444.8	442.5	440.9
55°	414.4	414.2	414.1	413.9	413.7	412.5	410.3	408.1	405.9	403.7	401.8
57.5°	375.2	374.6	374.0	373.5	372.9	371.7	369.9	368.2	366.4	364.6	363.0
60°	347.0	346.8	346.7	346.5	346.3	345.2	343.2	341.1	339.1	337.0	335.5
62.5°	321.9	321.4	321.0	320.6	320.1	318.9	316.8	314.8	312.7	310.7	309.2
65°	282.7	281.8	281.0	280.1	279.3	278.0	276.3	274.6	272.9	271.2	269.8
67.5°	241.1	240.4	239.6	238.9	238.1	237.1	235.8	234.5	233.2	232.0	230.8
70°	216.0	215.0	214.0	213.0	211.9	210.9	209.9	208.9	207.8	206.8	205.6
72.5°	189.7	188.9	188.2	187.4	186.7	185.7	184.6	183.4	182.2	181.1	180.0
75°	149.4	148.7	148.0	147.3	146.7	146.1	145.5	145.0	144.5	144.0	143.2
77.5°	113.7	113.3	112.9	112.6	112.2	111.7	111.1	110.5	109.8	109.2	108.7
80°	90.4	89.9	89.4	88.9	88.3	87.9	87.6	87.2	86.9	86.6	86.4
82.5°	67.7	67.6	67.5	67.4	67.3	67.2	67.2	67.1	67.0	67.0	66.6
85°	39.8	39.5	39.2	38.8	38.5	38.3	38.3	38.3	38.3	38.3	38.0
87.5°	16.2	16.4	16.5	16.7	16.8	17.2	17.8	18.4	19.0	19.7	19.7
90°	1.3	4.1	7.0	9.9	12.7	16.0	19.7	23.4	27.1	30.9	32.0
92.5°	23.9	23.1	22.3	21.5	20.7	21.7	24.5	27.3	30.1	32.9	34.7
95°	78.4	66.7	55.0	43.3	31.6	27.3	30.4	33.6	36.7	39.9	41.9
97.5°	157.6	152.4	147.1	141.9	136.6	123.7	103.1	82.6	62.0	41.4	43.7
100°	217.3	223.0	228.7	234.4	240.2	220.7	176.2	131.6	87.0	42.4	44.7
102.5°	285.2	289.3	293.4	297.5	301.7	279.4	230.7	182.0	133.3	84.6	77.5
105°	383.2	386.3	389.5	392.6	395.7	384.5	358.7	333.0	307.3	281.6	231.0
107.5°	486.6	489.1	491.6	494.1	496.6	499.9	504.0	508.0	512.1	516.1	479.0
110°	555.5	557.8	560.0	562.3	564.6	567.3	570.5	573.6	576.8	579.9	570.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	621.3	623.4	625.4	627.5	629.5	632.1	635.3	638.4	641.6	644.7	644.9
115°	718.8	720.5	722.2	723.9	725.6	727.8	730.3	732.9	735.5	738.1	740.9
117.5°	813.2	815.3	817.4	819.5	821.6	823.3	824.6	826.0	827.3	828.6	830.9
120°	871.8	874.4	876.9	879.5	882.1	883.8	884.6	885.5	886.4	887.2	889.5
122.5°	931.5	933.6	935.7	937.8	939.9	941.5	942.6	943.7	944.8	945.9	947.5
125°	1013.2	1015.5	1017.8	1020.1	1022.4	1024.1	1025.2	1026.4	1027.5	1028.7	1029.2
127.5°	1092.4	1094.7	1097.0	1099.3	1101.6	1103.4	1104.8	1106.2	1107.5	1108.9	1109.8
130°	1141.8	1144.1	1146.4	1148.7	1151.0	1152.7	1153.8	1155.0	1156.1	1157.2	1158.4
132.5°	1189.1	1191.4	1193.7	1196.0	1198.3	1199.9	1200.8	1201.7	1202.6	1203.5	1204.7
135°	1261.4	1263.1	1264.8	1266.5	1268.3	1269.7	1270.8	1272.0	1273.1	1274.3	1275.1
137.5°	1323.1	1325.3	1327.5	1329.6	1331.8	1333.2	1333.8	1334.5	1335.1	1335.7	1337.1
140°	1364.3	1366.0	1367.7	1369.4	1371.1	1372.4	1373.3	1374.1	1375.0	1375.8	1377.0
142.5°	1402.3	1404.0	1405.8	1407.5	1409.2	1410.5	1411.3	1412.2	1413.0	1413.9	1414.8
145°	1455.6	1457.6	1459.6	1461.6	1463.6	1464.8	1465.4	1466.0	1466.6	1467.1	1467.7
147.5°	1505.7	1507.0	1508.3	1509.6	1511.0	1511.9	1512.5	1513.0	1513.6	1514.2	1514.8
150°	1536.6	1537.4	1538.3	1539.1	1540.0	1540.7	1541.3	1541.8	1542.4	1543.0	1543.6
152.5°	1564.3	1564.7	1565.1	1565.5	1565.9	1566.3	1566.7	1567.0	1567.3	1567.7	1568.7
155°	1603.4	1602.9	1602.3	1601.7	1601.1	1601.0	1601.3	1601.6	1601.9	1602.1	1603.6
157.5°	1633.8	1633.7	1633.7	1633.6	1633.5	1633.4	1633.1	1632.8	1632.5	1632.2	1633.9
160°	1652.3	1652.0	1651.7	1651.4	1651.1	1650.9	1650.6	1650.3	1650.0	1649.7	1651.4
162.5°	1669.8	1669.0	1668.3	1667.5	1666.8	1666.3	1666.0	1665.7	1665.4	1665.1	1667.1
165°	1690.9	1690.0	1689.1	1688.3	1687.4	1686.9	1686.6	1686.3	1686.0	1685.7	1688.0
167.5°	1707.3	1706.2	1705.0	1703.9	1702.7	1702.2	1702.2	1702.2	1702.2	1702.2	1704.5
170°	1716.6	1715.4	1714.3	1713.2	1712.0	1711.4	1711.4	1711.4	1711.4	1711.4	1713.7
172.5°	1722.8	1721.4	1720.0	1718.6	1717.3	1716.7	1716.9	1717.2	1717.4	1717.6	1719.9
175°	1730.7	1729.3	1727.9	1726.4	1725.0	1724.4	1724.7	1725.0	1725.3	1725.6	1727.6
177.5°	1732.8	1731.6	1730.5	1729.4	1728.2	1727.8	1728.0	1728.2	1728.4	1728.7	1730.5
180°	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	890.9	890.9	890.9	890.9	890.9	890.9	890.9	890.9
2.5°	887.5	888.8	890.2	890.8	890.7	890.5	890.4	890.3
5°	882.8	884.5	886.2	886.9	886.5	886.2	885.9	885.5
7.5°	873.4	874.9	876.5	877.1	876.9	876.7	876.5	876.3
10°	864.8	866.4	867.9	868.5	868.2	867.8	867.5	867.1
12.5°	855.4	856.6	857.7	858.1	857.9	857.7	857.5	857.3
15°	838.5	839.8	841.2	841.3	840.3	839.3	838.3	837.3
17.5°	817.0	817.9	818.9	819.1	818.8	818.4	818.0	817.6
20°	801.1	801.8	802.4	802.5	802.0	801.5	801.0	800.5
22.5°	784.3	784.8	785.4	785.3	784.7	784.0	783.4	782.7
25°	756.4	756.6	756.7	756.6	756.1	755.6	755.0	754.5
27.5°	726.8	726.9	727.0	726.8	726.1	725.5	724.8	724.2
30°	706.3	706.3	706.3	705.7	704.5	703.3	702.1	700.9
32.5°	684.8	683.8	682.8	682.0	681.4	680.8	680.1	679.5
35°	649.8	648.8	647.8	646.9	646.0	645.2	644.3	643.5
37.5°	613.7	612.5	611.3	610.4	609.9	609.3	608.8	608.2
40°	590.2	588.8	587.5	586.4	585.7	585.1	584.4	583.7
42.5°	565.7	564.3	562.9	561.9	561.2	560.6	559.9	559.2
45°	529.1	527.0	525.0	523.5	522.7	521.8	521.0	520.1
47.5°	490.5	488.5	486.5	485.1	484.4	483.6	482.9	482.1
50°	465.1	463.2	461.3	459.9	458.8	457.8	456.8	455.8
52.5°	439.3	437.7	436.1	434.7	433.7	432.7	431.7	430.7
55°	399.9	398.1	396.2	394.8	394.0	393.1	392.3	391.4
57.5°	361.3	359.6	358.0	356.6	355.6	354.7	353.7	352.7
60°	334.0	332.5	330.9	329.7	328.9	328.0	327.2	326.3
62.5°	307.6	306.1	304.6	303.5	302.9	302.4	301.8	301.2
65°	268.4	267.1	265.7	264.8	264.3	263.8	263.3	262.7
67.5°	229.6	228.4	227.2	226.2	225.5	224.8	224.1	223.4
70°	204.4	203.3	202.1	201.0	200.2	199.3	198.5	197.6
72.5°	179.0	177.9	176.9	176.1	175.7	175.2	174.8	174.3
75°	142.3	141.5	140.6	139.9	139.4	138.9	138.4	137.9
77.5°	108.1	107.5	106.9	106.6	106.6	106.6	106.6	106.6
80°	86.2	86.0	85.9	85.8	85.8	85.8	85.8	85.8
82.5°	66.3	66.0	65.7	65.5	65.4	65.2	65.1	65.0
85°	37.6	37.3	36.9	36.8	36.8	36.8	36.8	36.8
87.5°	19.8	19.9	20.0	20.1	20.2	20.4	20.5	20.6
90°	33.1	34.3	35.4	36.3	36.9	37.4	38.0	38.6
92.5°	36.6	38.4	40.2	41.3	41.7	42.0	42.3	42.7
95°	43.9	45.9	47.9	48.9	48.9	48.9	48.9	48.9
97.5°	46.0	48.3	50.5	51.8	52.1	52.4	52.7	53.0
100°	47.0	49.3	51.6	52.9	53.1	53.4	53.7	54.0
102.5°	70.4	63.3	56.3	53.0	53.5	54.0	54.5	55.0
105°	180.4	129.9	79.3	54.3	54.9	55.4	56.0	56.6
107.5°	442.0	404.9	367.8	330.2	292.1	253.9	215.8	177.7
110°	561.0	551.6	542.2	517.0	476.2	435.3	394.5	353.6



TEST NUMBER: P332142

CATALOG NUMBER: S123DIW-S560D1320U835-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	645.1	645.2	645.4	641.2	632.5	623.9	615.3	606.7
115°	743.8	746.6	749.5	751.5	752.6	753.8	754.9	756.1
117.5°	833.2	835.4	837.7	839.0	839.2	839.4	839.7	839.9
120°	891.8	894.1	896.4	897.5	897.5	897.5	897.5	897.5
122.5°	949.1	950.7	952.3	953.2	953.4	953.6	953.9	954.1
125°	1029.8	1030.4	1030.9	1031.5	1032.1	1032.7	1033.2	1033.8
127.5°	1110.7	1111.6	1112.6	1112.7	1112.2	1111.6	1111.0	1110.4
130°	1159.5	1160.7	1161.8	1162.1	1161.5	1161.0	1160.4	1159.8
132.5°	1205.8	1207.0	1208.1	1208.3	1207.5	1206.7	1205.9	1205.1
135°	1276.0	1276.8	1277.7	1277.7	1276.8	1276.0	1275.1	1274.3
137.5°	1338.5	1339.8	1341.2	1341.6	1341.0	1340.5	1339.9	1339.3
140°	1378.1	1379.3	1380.4	1380.7	1380.1	1379.5	1379.0	1378.4
142.5°	1415.7	1416.6	1417.6	1417.6	1416.8	1416.0	1415.2	1414.4
145°	1468.3	1468.8	1469.4	1469.7	1469.7	1469.7	1469.7	1469.7
147.5°	1515.3	1515.9	1516.5	1516.1	1514.8	1513.5	1512.2	1510.8
150°	1544.1	1544.7	1545.3	1545.1	1544.3	1543.4	1542.6	1541.7
152.5°	1569.7	1570.8	1571.8	1571.7	1570.3	1569.0	1567.7	1566.4
155°	1605.0	1606.4	1607.9	1607.7	1606.0	1604.3	1602.6	1600.9
157.5°	1635.7	1637.4	1639.1	1638.8	1636.6	1634.4	1632.1	1629.9
160°	1653.1	1654.9	1656.6	1656.4	1654.4	1652.4	1650.4	1648.4
162.5°	1669.0	1671.0	1672.9	1673.0	1671.2	1669.5	1667.7	1665.9
165°	1690.3	1692.6	1694.9	1695.0	1693.0	1691.0	1689.0	1687.0
167.5°	1706.8	1709.0	1711.3	1711.3	1709.0	1706.8	1704.5	1702.2
170°	1716.0	1718.3	1720.6	1720.6	1718.3	1716.0	1713.7	1711.4
172.5°	1722.2	1724.5	1726.8	1726.6	1724.1	1721.6	1719.1	1716.6
175°	1729.6	1731.6	1733.6	1733.4	1731.2	1728.9	1726.6	1724.3
177.5°	1732.3	1734.2	1736.0	1735.8	1733.5	1731.2	1728.9	1726.6
180°	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7

(END OF REPORT)