

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: P332140

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332140
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-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7645.8 lumens
Efficiency: N/A
Efficacy: 142.1 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

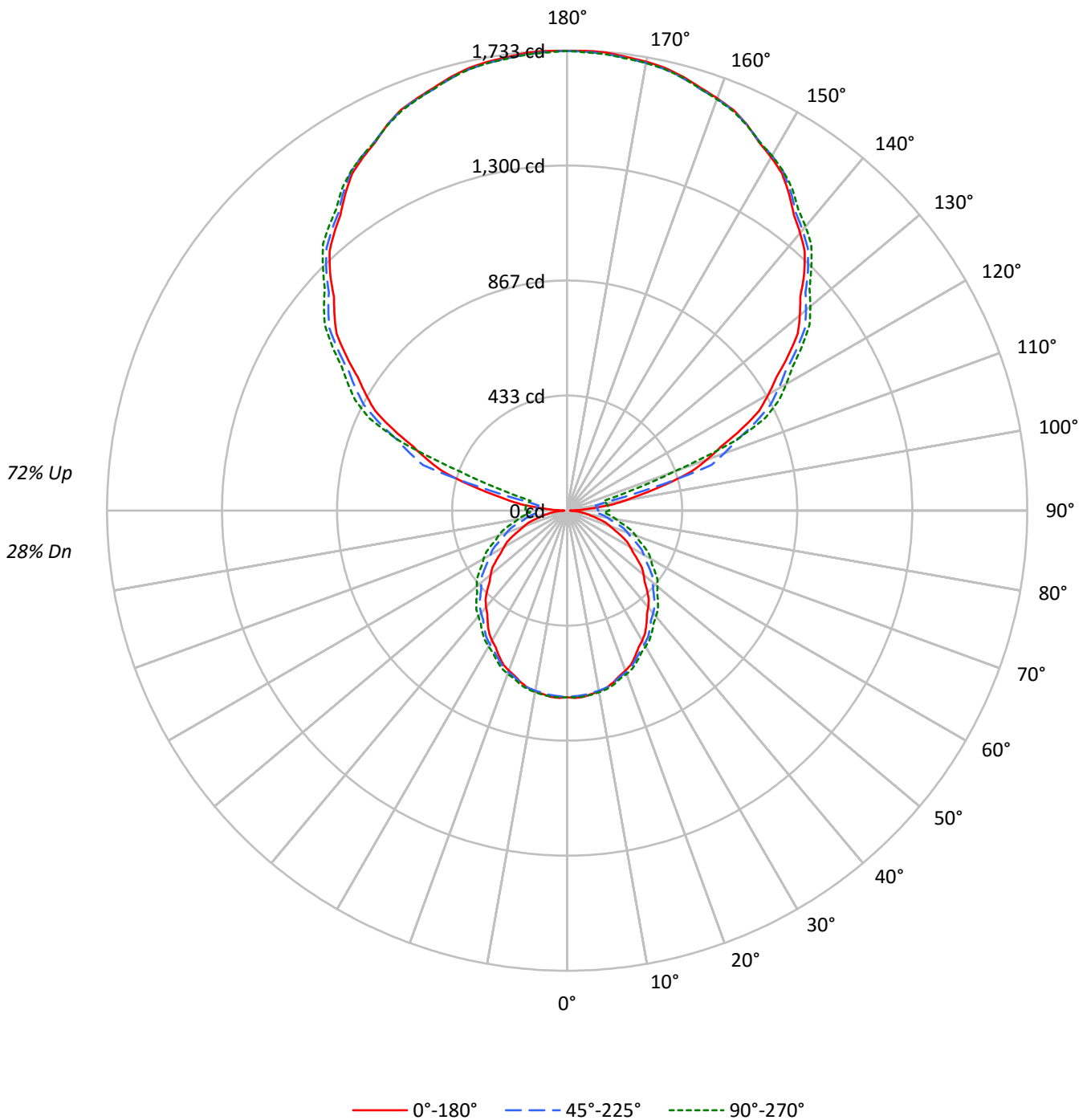
Input Watts (W): 53.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332140

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

Luminous Intensity Polar Plot





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

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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	28				
1	92	88	84	80	82	79	75	72	61	59	57	46	44	43	31	30	29	23				
2	84	76	70	65	75	68	63	59	53	50	47	40	37	35	27	26	24	18				
3	76	67	60	54	68	60	54	49	47	43	39	35	32	29	24	22	20	15				
4	70	59	51	45	62	53	46	41	41	37	33	31	28	25	21	19	17	13				
5	64	52	44	38	57	47	40	35	37	32	28	28	24	21	19	17	15	11				
6	59	47	39	33	52	42	35	30	33	28	24	25	21	19	17	15	13	10				
7	54	42	34	29	48	38	31	26	30	25	21	22	19	16	16	13	12	9				
8	50	38	30	25	45	34	28	23	27	22	19	20	17	14	14	12	10	8				
9	46	34	27	22	41	31	25	20	25	20	17	19	15	13	13	11	9	7				
10	43	31	24	20	39	28	22	18	23	18	15	17	14	12	12	10	8	6				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7569	7569	7569
5°	7593	7378	7383
10°	7525	7209	7173
15°	7428	7016	6943
20°	7289	6795	6690
25°	7119	6541	6425
30°	6943	6313	6156
35°	6746	6072	5942
40°	6558	5852	5711
45°	6351	5641	5527
50°	6145	5433	5325
55°	5919	5219	5143
60°	5697	5003	4956
65°	5471	4772	4733
70°	5132	4514	4504
75°	4700	4216	4274
80°	4202	3924	4008
85°	3741	3722	3854



TEST NUMBER: P332140

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

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.7	0.9
10°-20°	190.0	2.5
20°-30°	284.2	3.7
30°-40°	339.4	4.4
40°-50°	355.1	4.6
50°-60°	333.2	4.4
60°-70°	278.3	3.6
70°-80°	199.1	2.6
80°-90°	123.6	1.6
90°-100°	137.4	1.8
100°-110°	354.7	4.6
110°-120°	756.9	9.9
120°-130°	938.2	12.3
130°-140°	989.5	12.9
140°-150°	918.5	12.0
150°-160°	739.3	9.7
160°-170°	477.1	6.2
170°-180°	164.4	2.2
0°-30°	540.9	7.1
0°-40°	880.3	11.5
0°-60°	1568.7	20.5
0°-90°	2169.8	28.4
90°-120°	1249.0	16.3
90°-150°	4095.2	53.6
90°-180°	5476.0	71.6
0°-180°	7645.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	703	703	703	703	703	
5°	704	702	698	704	703	67
15°	670	672	672	679	679	189
25°	605	613	615	625	625	279
35°	521	533	543	554	558	326
45°	426	444	463	478	484	328
55°	325	350	378	398	404	291
65°	224	255	288	310	319	222
75°	122	158	196	220	231	130
85°	38	76	116	141	150	39
90°	11	62	117	147	159	10
95°	87	68	116	147	156	104
105°	389	415	339	145	142	412
115°	723	741	779	809	821	713
125°	1016	1027	1053	1071	1080	907
135°	1263	1270	1283	1300	1301	972
145°	1456	1464	1467	1476	1479	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	



TEST NUMBER: P332140

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

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2
2.5°	706.3	705.9	705.5	705.0	704.6	703.9	702.8	701.7	700.6	699.5	700.6
5°	704.0	703.6	703.3	703.0	702.6	701.9	700.9	699.9	698.9	697.8	699.2
7.5°	697.1	697.1	697.2	697.3	697.4	696.9	695.9	694.9	693.9	692.9	694.6
10°	691.0	691.3	691.6	692.0	692.3	692.1	691.2	690.4	689.5	688.7	690.4
12.5°	683.6	684.1	684.6	685.0	685.5	685.5	684.9	684.3	683.7	683.1	684.7
15°	670.3	670.8	671.3	671.8	672.3	672.5	672.3	672.1	672.0	671.8	673.5
17.5°	653.4	654.4	655.5	656.5	657.5	658.0	657.9	657.8	657.8	657.7	659.2
20°	641.2	642.2	643.2	644.2	645.2	645.9	646.3	646.6	646.9	647.3	648.8
22.5°	628.3	629.3	630.3	631.4	632.4	633.1	633.6	634.1	634.6	635.0	637.0
25°	605.2	606.9	608.6	610.3	612.0	613.1	613.6	614.1	614.6	615.1	617.3
27.5°	581.9	583.8	585.8	587.7	589.6	591.1	592.2	593.3	594.4	595.5	597.4
30°	565.3	567.5	569.7	572.0	574.2	576.0	577.3	578.7	580.0	581.4	583.5
32.5°	546.9	549.4	551.9	554.4	556.9	559.0	560.8	562.5	564.3	566.1	568.3
35°	520.9	523.6	526.3	529.1	531.8	534.3	536.5	538.7	540.9	543.1	545.7
37.5°	493.3	496.4	499.4	502.5	505.6	508.5	511.2	513.9	516.6	519.4	522.3
40°	474.9	478.0	481.1	484.1	487.2	490.4	493.8	497.2	500.6	504.0	506.9
42.5°	454.7	458.5	462.2	465.9	469.7	473.3	476.9	480.4	484.0	487.5	490.7
45°	425.9	430.0	434.1	438.2	442.2	446.4	450.7	454.9	459.2	463.4	466.7
47.5°	395.7	400.4	405.0	409.6	414.2	419.0	423.9	428.7	433.6	438.5	442.1
50°	376.1	380.9	385.6	390.4	395.2	400.2	405.5	410.8	416.0	421.3	425.2
52.5°	355.3	360.3	365.4	370.4	375.4	380.9	386.7	392.5	398.3	404.2	408.2
55°	324.8	330.4	336.0	341.6	347.3	353.1	359.3	365.4	371.5	377.6	382.2
57.5°	295.1	300.9	306.8	312.6	318.5	324.8	331.5	338.2	344.9	351.6	356.2
60°	274.2	280.4	286.5	292.6	298.7	305.3	312.3	319.3	326.2	333.2	338.0
62.5°	254.6	260.9	267.2	273.4	279.7	286.5	293.9	301.3	308.7	316.1	320.8
65°	224.4	231.1	237.7	244.4	251.0	258.1	265.6	273.0	280.5	288.0	293.1
67.5°	193.8	200.9	207.9	214.9	222.0	229.3	237.0	244.6	252.2	259.8	265.4
70°	172.4	179.7	187.0	194.3	201.6	209.4	217.5	225.7	233.9	242.1	247.5
72.5°	152.7	160.1	167.4	174.7	182.0	189.9	198.3	206.8	215.2	223.7	229.3
75°	121.8	129.8	137.8	145.8	153.8	162.1	170.6	179.1	187.6	196.1	201.7
77.5°	94.8	102.9	111.0	119.0	127.1	135.4	144.0	152.6	161.2	169.8	175.7
80°	75.8	84.2	92.5	100.9	109.2	117.8	126.6	135.5	144.4	153.2	159.0
82.5°	59.3	67.8	76.2	84.7	93.2	101.9	110.9	119.9	128.9	137.9	143.7
85°	37.5	46.0	54.6	63.1	71.6	80.3	89.4	98.4	107.4	116.4	122.2
87.5°	20.6	29.7	38.7	47.8	56.8	66.1	75.5	84.9	94.3	103.8	109.8
90°	11.2	22.4	33.6	44.8	56.0	67.8	80.2	92.6	105.0	117.4	124.4
92.5°	33.3	40.0	46.7	53.4	60.2	69.2	80.5	91.9	103.2	114.6	122.1
95°	86.9	81.8	76.7	71.6	66.6	69.8	81.2	92.7	104.2	115.7	123.0
97.5°	165.1	165.9	166.6	167.4	168.1	162.2	149.5	136.9	124.3	111.7	119.1
100°	224.2	235.4	246.5	257.7	268.8	256.1	219.3	182.6	145.8	109.1	116.3
102.5°	291.5	300.5	309.5	318.5	327.5	311.6	270.6	229.6	188.6	147.6	145.3
105°	389.3	396.5	403.8	411.0	418.2	412.6	394.2	375.8	357.4	339.0	293.2
107.5°	491.8	497.8	503.7	509.7	515.7	524.2	535.2	546.2	557.2	568.2	535.7
110°	560.1	565.4	570.8	576.1	581.5	589.1	599.1	609.0	619.0	628.9	623.9



TEST NUMBER: P332140

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

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	625.9	630.5	635.1	639.6	644.2	651.3	661.0	670.7	680.4	690.1	694.5
115°	722.6	726.4	730.1	733.9	737.6	743.9	752.6	761.3	770.0	778.7	785.6
117.5°	816.8	820.2	823.6	827.0	830.3	835.6	842.6	849.7	856.8	863.8	870.2
120°	874.9	878.3	881.7	885.1	888.5	893.5	900.0	906.4	912.9	919.4	925.6
122.5°	934.5	937.1	939.6	942.2	944.7	949.2	955.7	962.1	968.5	975.0	980.3
125°	1015.5	1017.8	1020.1	1022.4	1024.7	1028.9	1034.9	1041.0	1047.1	1053.2	1057.3
127.5°	1094.7	1096.9	1099.0	1101.1	1103.2	1107.0	1112.4	1117.9	1123.4	1128.8	1133.1
130°	1144.1	1146.2	1148.3	1150.5	1152.6	1155.9	1160.5	1165.0	1169.5	1174.1	1178.5
132.5°	1190.8	1193.1	1195.3	1197.6	1199.8	1202.8	1206.4	1210.0	1213.7	1217.3	1221.6
135°	1262.9	1264.5	1266.0	1267.6	1269.1	1271.4	1274.4	1277.4	1280.4	1283.4	1287.4
137.5°	1324.5	1326.5	1328.6	1330.6	1332.6	1334.5	1336.2	1337.9	1339.5	1341.2	1345.3
140°	1365.0	1366.7	1368.5	1370.2	1371.9	1373.4	1374.8	1376.2	1377.5	1378.9	1382.6
142.5°	1403.1	1404.7	1406.2	1407.8	1409.4	1410.7	1411.6	1412.6	1413.5	1414.5	1417.7
145°	1456.3	1458.2	1460.0	1461.8	1463.6	1464.8	1465.4	1466.0	1466.6	1467.1	1469.1
147.5°	1505.7	1507.0	1508.3	1509.6	1511.0	1511.9	1512.5	1513.0	1513.6	1514.2	1515.2
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



TEST NUMBER: P332140

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	703.2	703.2	703.2	703.2	703.2	703.2	703.2	703.2
2.5°	701.7	702.8	703.9	704.4	704.2	704.1	704.0	703.8
5°	700.6	701.9	703.3	703.9	703.7	703.5	703.4	703.2
7.5°	696.3	698.0	699.8	700.5	700.3	700.1	699.9	699.7
10°	692.1	693.8	695.5	696.1	695.8	695.5	695.1	694.8
12.5°	686.3	687.8	689.4	690.0	689.7	689.3	689.0	688.7
15°	675.2	676.9	678.6	679.4	679.2	679.0	678.9	678.7
17.5°	660.8	662.3	663.8	664.5	664.2	664.0	663.8	663.5
20°	650.4	651.9	653.4	654.3	654.4	654.6	654.8	654.9
22.5°	638.9	640.9	642.8	643.7	643.6	643.5	643.4	643.3
25°	619.5	621.8	624.0	625.1	625.1	625.1	625.1	625.1
27.5°	599.3	601.2	603.1	604.2	604.3	604.4	604.6	604.7
30°	585.5	587.5	589.6	590.6	590.6	590.6	590.6	590.6
32.5°	570.4	572.6	574.8	576.1	576.5	576.9	577.3	577.7
35°	548.2	550.8	553.3	554.9	555.6	556.3	557.0	557.7
37.5°	525.1	528.0	530.9	532.7	533.2	533.7	534.3	534.8
40°	509.8	512.7	515.6	517.4	518.1	518.8	519.4	520.1
42.5°	493.8	497.0	500.2	502.2	503.2	504.1	505.1	506.0
45°	469.9	473.1	476.4	478.7	480.0	481.4	482.8	484.1
47.5°	445.8	449.4	453.0	455.4	456.4	457.5	458.6	459.6
50°	429.1	433.1	437.0	439.5	440.7	441.9	443.1	444.3
52.5°	412.3	416.3	420.4	423.1	424.6	426.0	427.5	429.0
55°	386.8	391.4	396.0	399.0	400.4	401.7	403.1	404.5
57.5°	360.9	365.5	370.1	373.2	374.8	376.4	378.0	379.6
60°	342.8	347.5	352.3	355.6	357.5	359.3	361.2	363.1
62.5°	325.6	330.4	335.1	338.4	340.1	341.8	343.6	345.3
65°	298.2	303.3	308.5	311.9	313.6	315.3	317.0	318.7
67.5°	271.0	276.6	282.2	285.7	287.1	288.5	290.0	291.4
70°	253.0	258.4	263.9	267.4	269.1	270.8	272.5	274.2
72.5°	234.8	240.4	246.0	249.7	251.4	253.1	254.8	256.5
75°	207.3	213.0	218.6	222.4	224.4	226.5	228.5	230.6
77.5°	181.6	187.5	193.4	197.2	198.8	200.3	201.9	203.5
80°	164.8	170.6	176.4	180.1	181.8	183.5	185.2	186.9
82.5°	149.5	155.2	161.0	164.8	166.5	168.2	169.9	171.6
85°	128.0	133.8	139.6	143.3	145.0	146.7	148.4	150.1
87.5°	115.8	121.8	127.8	131.7	133.6	135.4	137.2	139.0
90°	131.3	138.2	145.1	149.7	152.0	154.3	156.6	158.8
92.5°	129.5	137.0	144.5	149.2	151.1	153.0	154.9	156.8
95°	130.3	137.5	144.8	149.3	151.0	152.7	154.4	156.1
97.5°	126.4	133.8	141.2	145.8	147.8	149.8	151.8	153.8
100°	123.5	130.7	138.0	142.6	144.6	146.5	148.5	150.5
102.5°	143.0	140.7	138.4	138.4	140.6	142.8	145.0	147.3
105°	247.4	201.6	155.8	134.0	136.1	138.2	140.3	142.4
107.5°	503.2	470.6	438.1	403.5	366.9	330.3	293.7	257.1
110°	618.9	613.9	608.9	586.7	547.2	507.7	468.2	428.7



TEST NUMBER: P332140

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	699.0	703.4	707.9	706.6	699.4	692.3	685.2	678.0
115°	792.5	799.5	806.4	811.2	813.7	816.2	818.7	821.2
117.5°	876.5	882.8	889.2	893.1	894.7	896.2	897.8	899.3
120°	931.8	938.0	944.2	947.9	949.1	950.3	951.5	952.7
122.5°	985.7	991.1	996.5	999.9	1001.3	1002.7	1004.1	1005.6
125°	1061.5	1065.6	1069.8	1072.7	1074.5	1076.2	1078.0	1079.8
127.5°	1137.4	1141.7	1146.0	1148.4	1149.0	1149.6	1150.1	1150.7
130°	1182.9	1187.2	1191.6	1194.0	1194.5	1194.9	1195.4	1195.8
132.5°	1225.8	1230.0	1234.3	1236.6	1236.9	1237.3	1237.7	1238.0
135°	1291.3	1295.2	1299.1	1301.1	1301.1	1301.1	1301.1	1301.1
137.5°	1349.4	1353.4	1357.5	1359.6	1359.9	1360.2	1360.5	1360.8
140°	1386.3	1390.0	1393.7	1395.7	1396.0	1396.2	1396.5	1396.8
142.5°	1420.9	1424.1	1427.3	1428.9	1429.0	1429.0	1429.1	1429.1
145°	1471.0	1472.9	1474.9	1476.2	1476.9	1477.5	1478.2	1478.9
147.5°	1516.2	1517.1	1518.1	1518.2	1517.5	1516.8	1516.1	1515.4
150°	1544.1	1544.7	1545.3	1545.3	1544.8	1544.3	1543.8	1543.2
152.5°	1569.7	1570.8	1571.8	1571.7	1570.4	1569.2	1567.9	1566.7
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)