

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: P331949-840

Luminaire Tested: **S123DIP-S560D1195U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331949-840  
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: S123DIP-S560D1195U840-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1195 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7206.7 lumens  
Efficiency: N/A  
Efficacy: 145.9 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

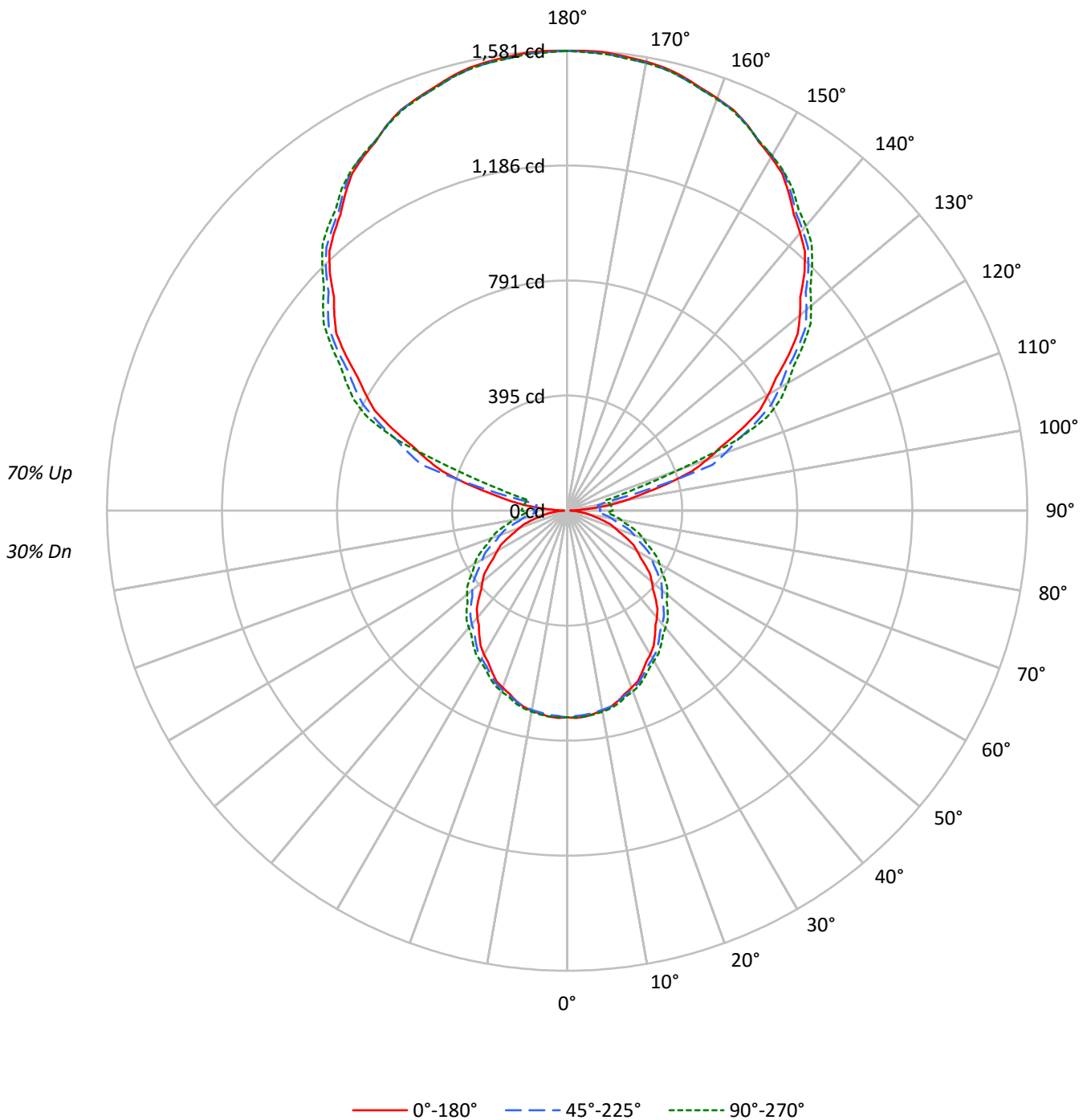
Input Watts (W): 49.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	102	102	102	102	92	92	92	92	72	72	72	55	55	55	38	38	38	30
1	93	88	84	81	83	79	76	73	62	60	58	47	45	44	33	32	31	24
2	84	77	70	65	75	69	64	59	54	51	47	41	38	36	28	27	25	20
3	77	67	60	54	68	60	54	49	48	43	40	36	33	30	25	23	21	16
4	70	59	51	45	62	53	47	41	42	37	33	32	28	26	22	20	18	14
5	64	52	44	39	57	47	40	35	37	32	29	28	25	22	20	18	16	12
6	59	47	39	33	52	42	35	30	34	29	25	25	22	19	18	16	14	10
7	54	42	34	29	48	38	31	26	30	25	22	23	20	17	16	14	12	9
8	50	38	31	25	45	34	28	23	28	23	19	21	17	15	15	13	11	8
9	47	35	27	22	42	31	25	21	25	20	17	19	16	13	14	11	10	7
10	43	32	25	20	39	29	22	18	23	18	15	18	14	12	13	10	9	7

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	7643	7643	7643
5°	7667	7451	7455
10°	7599	7280	7244
15°	7501	7084	7012
20°	7361	6862	6756
25°	7189	6606	6489
30°	7011	6375	6216
35°	6812	6132	6000
40°	6623	5910	5767
45°	6414	5697	5582
50°	6206	5488	5378
55°	5978	5271	5194
60°	5753	5053	5005
65°	5525	4819	4780
70°	5183	4558	4549
75°	4746	4256	4316
80°	4241	3962	4047
85°	3780	3757	3892



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	67.3	0.9
10°-20°	191.9	2.7
20°-30°	287.0	4.0
30°-40°	342.8	4.8
40°-50°	358.6	5.0
50°-60°	336.5	4.7
60°-70°	281.1	3.9
70°-80°	201.1	2.8
80°-90°	124.3	1.7
90°-100°	132.7	1.8
100°-110°	328.9	4.6
110°-120°	694.2	9.6
120°-130°	858.1	11.9
130°-140°	903.8	12.5
140°-150°	838.3	11.6
150°-160°	674.6	9.4
160°-170°	435.4	6.0
170°-180°	150.0	2.1
0°-30°	546.3	7.6
0°-40°	889.0	12.3
0°-60°	1584.2	22.0
0°-90°	2190.7	30.4
90°-120°	1155.8	16.0
90°-150°	3756.0	52.1
90°-180°	5016.0	69.6
0°-180°	7206.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	710	710	710	710	710	
5°	711	709	705	710	710	67
15°	677	679	678	686	685	191
25°	611	619	621	631	631	282
35°	526	538	548	560	563	329
45°	430	449	468	482	489	332
55°	328	354	381	401	408	294
65°	227	257	291	313	322	224
75°	123	160	198	223	233	131
85°	38	77	118	143	152	40
90°	11	61	116	145	157	10
95°	80	66	113	144	153	95
105°	356	382	315	140	138	377
115°	660	677	714	744	756	651
125°	927	937	963	981	990	828
135°	1153	1159	1172	1188	1190	887
145°	1329	1336	1339	1347	1350	831
155°	1463	1461	1462	1467	1461	674
165°	1543	1539	1538	1547	1539	436
175°	1579	1574	1574	1582	1573	150
180°	1579	1579	1579	1579	1579	



TEST NUMBER: P331949-840

CATALOG NUMBER: S123DIP-S560D1195U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1
2.5°	713.3	712.9	712.5	712.0	711.6	710.8	709.7	708.6	707.5	706.4	707.5
5°	710.9	710.5	710.2	709.9	709.5	708.8	707.8	706.8	705.8	704.7	706.1
7.5°	704.0	704.0	704.1	704.2	704.3	703.8	702.8	701.8	700.7	699.7	701.5
10°	697.8	698.1	698.4	698.8	699.1	698.9	698.0	697.2	696.3	695.5	697.2
12.5°	690.3	690.8	691.4	691.8	692.3	692.3	691.7	691.1	690.4	689.8	691.5
15°	676.9	677.4	677.9	678.4	678.9	679.1	678.9	678.7	678.6	678.4	680.1
17.5°	659.8	660.9	662.0	663.0	664.0	664.5	664.4	664.3	664.3	664.2	665.7
20°	647.5	648.5	649.5	650.6	651.6	652.3	652.7	653.0	653.3	653.7	655.2
22.5°	634.5	635.5	636.5	637.6	638.6	639.3	639.9	640.4	640.9	641.3	643.3
25°	611.2	612.9	614.6	616.3	618.0	619.1	619.7	620.2	620.7	621.2	623.4
27.5°	587.6	589.6	591.6	593.5	595.4	596.9	598.0	599.2	600.3	601.4	603.3
30°	570.9	573.1	575.3	577.6	579.9	581.7	583.0	584.4	585.7	587.1	589.3
32.5°	552.3	554.8	557.3	559.9	562.4	564.5	566.3	568.0	569.9	571.7	573.9
35°	526.0	528.8	531.5	534.3	537.0	539.6	541.8	544.0	546.2	548.5	551.1
37.5°	498.2	501.3	504.3	507.5	510.6	513.5	516.2	519.0	521.7	524.5	527.5
40°	479.6	482.7	485.8	488.9	492.0	495.2	498.7	502.1	505.5	509.0	511.9
42.5°	459.2	463.0	466.8	470.5	474.3	478.0	481.6	485.1	488.8	492.3	495.5
45°	430.1	434.2	438.4	442.5	446.6	450.8	455.1	459.4	463.7	468.0	471.3
47.5°	399.6	404.3	409.0	413.6	418.3	423.1	428.1	432.9	437.9	442.8	446.5
50°	379.8	384.7	389.4	394.3	399.1	404.1	409.5	414.9	420.1	425.5	429.4
52.5°	358.8	363.9	369.0	374.1	379.1	384.7	390.5	396.4	402.2	408.2	412.2
55°	328.0	333.7	339.3	345.0	350.7	356.6	362.8	369.0	375.2	381.3	386.0
57.5°	298.0	303.9	309.8	315.7	321.6	328.0	334.8	341.5	348.3	355.1	359.7
60°	276.9	283.2	289.3	295.5	301.6	308.3	315.4	322.4	329.4	336.5	341.3
62.5°	257.1	263.5	269.8	276.1	282.5	289.3	296.8	304.3	311.7	319.2	324.0
65°	226.6	233.4	240.0	246.8	253.5	260.6	268.2	275.7	283.3	290.8	296.0
67.5°	195.7	202.9	210.0	217.0	224.2	231.6	239.3	247.0	254.7	262.4	268.0
70°	174.1	181.5	188.8	196.2	203.6	211.5	219.6	227.9	236.2	244.5	249.9
72.5°	154.2	161.7	169.1	176.4	183.8	191.8	200.3	208.8	217.3	225.9	231.6
75°	123.0	131.1	139.2	147.2	155.3	163.7	172.3	180.9	189.5	198.0	203.7
77.5°	95.7	103.9	112.1	120.2	128.4	136.7	145.4	154.1	162.8	171.5	177.4
80°	76.5	85.0	93.4	101.9	110.3	119.0	127.8	136.8	145.8	154.7	160.6
82.5°	59.9	68.5	77.0	85.5	94.1	102.9	112.0	121.1	130.2	139.3	145.1
85°	37.9	46.5	55.1	63.7	72.3	81.1	90.3	99.4	108.5	117.5	123.4
87.5°	20.8	29.9	39.0	48.1	57.2	66.4	75.8	85.3	94.7	104.2	110.3
90°	11.2	22.2	33.3	44.3	55.3	67.0	79.1	91.3	103.4	115.5	122.5
92.5°	31.3	38.2	45.0	51.9	58.8	67.8	79.0	90.1	101.3	112.5	119.9
95°	80.1	76.1	72.1	68.2	64.1	67.8	79.1	90.4	101.7	113.0	120.1
97.5°	151.4	152.7	153.9	155.2	156.4	151.7	141.0	130.3	119.6	108.8	116.0
100°	205.2	216.0	226.7	237.4	248.1	237.1	204.3	171.6	138.8	106.0	113.1
102.5°	266.6	275.3	284.0	292.7	301.4	287.4	250.7	214.1	177.4	140.8	139.2
105°	355.8	362.8	369.8	376.8	383.7	379.3	363.1	347.1	331.0	315.0	273.7
107.5°	449.2	455.0	460.8	466.7	472.4	480.7	491.4	502.1	512.8	523.5	494.3
110°	511.5	516.6	521.9	527.0	532.2	539.7	549.5	559.2	569.0	578.7	574.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	571.6	576.0	580.4	584.8	589.3	596.2	605.6	615.1	624.6	634.1	638.5
115°	659.7	663.4	667.0	670.7	674.2	680.3	688.8	697.4	705.9	714.5	721.1
117.5°	745.7	748.9	752.0	755.3	758.5	763.6	770.6	777.6	784.7	791.6	797.8
120°	798.6	801.7	805.0	808.2	811.4	816.3	822.6	829.1	835.6	842.0	848.1
122.5°	853.0	855.4	857.8	860.1	862.5	866.9	873.3	879.7	886.1	892.4	897.8
125°	926.9	929.0	931.0	933.1	935.2	939.3	945.3	951.3	957.4	963.4	967.6
127.5°	999.2	1001.1	1003.0	1004.9	1006.8	1010.5	1015.8	1021.2	1026.5	1032.0	1036.2
130°	1044.2	1046.1	1048.0	1050.0	1051.9	1055.0	1059.6	1064.0	1068.4	1073.0	1077.2
132.5°	1086.7	1088.8	1090.9	1092.9	1095.0	1097.7	1101.4	1104.9	1108.5	1112.1	1116.3
135°	1152.6	1153.9	1155.3	1156.7	1158.1	1160.2	1163.2	1166.1	1169.0	1171.9	1175.9
137.5°	1208.7	1210.5	1212.3	1214.3	1216.1	1217.8	1219.4	1221.1	1222.7	1224.4	1228.3
140°	1245.6	1247.2	1248.7	1250.3	1251.8	1253.3	1254.6	1255.9	1257.2	1258.5	1262.1
142.5°	1280.3	1281.7	1283.2	1284.6	1286.1	1287.2	1288.1	1289.0	1289.9	1290.7	1293.8
145°	1328.9	1330.6	1332.2	1333.8	1335.5	1336.7	1337.2	1337.7	1338.2	1338.7	1340.6
147.5°	1373.9	1375.1	1376.3	1377.5	1378.7	1379.6	1380.1	1380.6	1381.1	1381.6	1382.6
150°	1402.1	1402.8	1403.6	1404.4	1405.2	1405.8	1406.3	1406.8	1407.4	1408.0	1408.5
152.5°	1427.4	1427.7	1428.2	1428.5	1428.9	1429.2	1429.5	1429.9	1430.2	1430.5	1431.4
155°	1463.1	1462.6	1462.0	1461.5	1461.0	1460.9	1461.1	1461.4	1461.7	1461.9	1463.2
157.5°	1490.8	1490.7	1490.7	1490.6	1490.6	1490.4	1490.2	1489.9	1489.7	1489.3	1491.0
160°	1507.6	1507.4	1507.1	1506.9	1506.6	1506.3	1506.1	1505.8	1505.6	1505.3	1506.9
162.5°	1523.6	1523.0	1522.3	1521.6	1520.9	1520.5	1520.1	1519.9	1519.6	1519.3	1521.2
165°	1542.9	1542.1	1541.3	1540.5	1539.7	1539.2	1538.9	1538.6	1538.4	1538.1	1540.2
167.5°	1557.9	1556.8	1555.8	1554.8	1553.7	1553.2	1553.2	1553.2	1553.2	1553.2	1555.3
170°	1566.3	1565.3	1564.3	1563.2	1562.2	1561.7	1561.7	1561.7	1561.7	1561.7	1563.7
172.5°	1572.0	1570.7	1569.4	1568.2	1566.9	1566.4	1566.6	1566.8	1567.0	1567.2	1569.3
175°	1579.2	1577.9	1576.6	1575.3	1574.0	1573.5	1573.8	1574.0	1574.3	1574.5	1576.4
177.5°	1581.1	1580.0	1579.0	1578.0	1576.9	1576.5	1576.7	1576.9	1577.1	1577.3	1579.0
180°	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1
2.5°	708.6	709.7	710.8	711.3	711.1	711.0	710.9	710.7
5°	707.5	708.8	710.2	710.8	710.6	710.4	710.3	710.1
7.5°	703.2	704.9	706.7	707.4	707.2	707.0	706.8	706.6
10°	698.9	700.6	702.4	703.0	702.7	702.4	702.0	701.7
12.5°	693.1	694.6	696.2	696.8	696.5	696.1	695.8	695.5
15°	681.9	683.6	685.3	686.1	685.9	685.7	685.6	685.4
17.5°	667.3	668.8	670.3	671.1	670.8	670.6	670.3	670.0
20°	656.8	658.3	659.8	660.8	660.9	661.1	661.3	661.4
22.5°	645.2	647.2	649.1	650.1	649.9	649.8	649.7	649.6
25°	625.6	627.9	630.2	631.3	631.3	631.3	631.3	631.3
27.5°	605.2	607.1	609.0	610.2	610.3	610.4	610.6	610.7
30°	591.3	593.3	595.4	596.4	596.4	596.4	596.4	596.4
32.5°	576.0	578.2	580.5	581.8	582.2	582.6	583.0	583.4
35°	553.6	556.2	558.8	560.4	561.1	561.8	562.5	563.2
37.5°	530.3	533.2	536.1	538.0	538.5	539.0	539.6	540.1
40°	514.8	517.8	520.7	522.5	523.2	523.9	524.5	525.2
42.5°	498.7	501.9	505.1	507.2	508.2	509.1	510.1	511.0
45°	474.5	477.8	481.1	483.4	484.7	486.1	487.6	488.9
47.5°	450.2	453.8	457.5	459.9	460.9	462.0	463.1	464.1
50°	433.3	437.4	441.3	443.8	445.0	446.3	447.5	448.7
52.5°	416.4	420.4	424.5	427.3	428.8	430.2	431.7	433.2
55°	390.6	395.3	399.9	402.9	404.3	405.7	407.1	408.5
57.5°	364.5	369.1	373.8	376.9	378.5	380.1	381.7	383.3
60°	346.2	350.9	355.8	359.1	361.0	362.8	364.8	366.7
62.5°	328.8	333.7	338.4	341.7	343.5	345.2	347.0	348.7
65°	301.1	306.3	311.5	315.0	316.7	318.4	320.1	321.8
67.5°	273.7	279.3	285.0	288.5	289.9	291.3	292.9	294.3
70°	255.5	260.9	266.5	270.0	271.8	273.5	275.2	276.9
72.5°	237.1	242.8	248.4	252.2	253.9	255.6	257.3	259.0
75°	209.3	215.1	220.8	224.6	226.6	228.7	230.8	232.9
77.5°	183.4	189.3	195.3	199.1	200.8	202.3	203.9	205.5
80°	166.4	172.3	178.1	181.9	183.6	185.3	187.0	188.7
82.5°	151.0	156.7	162.6	166.4	168.1	169.9	171.6	173.3
85°	129.3	135.1	141.0	144.7	146.4	148.1	149.9	151.6
87.5°	116.3	122.4	128.4	132.3	134.2	136.0	137.8	139.7
90°	129.4	136.2	143.1	147.6	150.0	152.2	154.4	156.6
92.5°	127.2	134.6	142.0	146.6	148.6	150.5	152.3	154.2
95°	127.2	134.4	141.6	146.0	147.7	149.5	151.2	152.9
97.5°	123.2	130.4	137.6	142.2	144.2	146.2	148.1	150.2
100°	120.2	127.2	134.3	138.9	140.8	142.8	144.8	146.7
102.5°	137.5	135.9	134.3	134.6	136.8	139.0	141.2	143.4
105°	232.3	191.0	149.7	130.0	132.1	134.1	136.2	138.3
107.5°	465.0	435.9	406.6	375.4	342.1	308.8	275.6	242.3
110°	570.4	566.2	562.1	542.1	506.1	470.3	434.3	398.5





TEST NUMBER: P331949-840

CATALOG NUMBER: S123DIP-S560D1195U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	643.1	647.5	652.1	651.1	644.7	638.3	632.0	625.6
115°	727.9	734.7	741.3	746.0	748.4	750.8	753.3	755.7
117.5°	804.0	810.2	816.4	820.2	821.7	823.3	824.9	826.4
120°	854.1	860.2	866.2	869.8	871.0	872.2	873.4	874.6
122.5°	903.0	908.3	913.5	916.9	918.3	919.7	921.1	922.5
125°	971.6	975.7	979.9	982.8	984.5	986.2	988.0	989.8
127.5°	1040.5	1044.7	1048.8	1051.4	1052.0	1052.6	1053.3	1053.9
130°	1081.6	1085.9	1090.1	1092.6	1093.1	1093.6	1094.2	1094.7
132.5°	1120.4	1124.6	1128.8	1131.0	1131.6	1132.0	1132.5	1132.9
135°	1179.7	1183.7	1187.5	1189.5	1189.5	1189.6	1189.7	1189.8
137.5°	1232.3	1236.3	1240.2	1242.4	1242.7	1243.0	1243.4	1243.7
140°	1265.8	1269.4	1272.9	1275.0	1275.3	1275.7	1276.0	1276.3
142.5°	1297.1	1300.2	1303.3	1304.9	1305.0	1305.1	1305.4	1305.5
145°	1342.5	1344.4	1346.3	1347.6	1348.3	1349.0	1349.7	1350.3
147.5°	1383.5	1384.4	1385.3	1385.5	1384.9	1384.4	1383.8	1383.2
150°	1409.0	1409.5	1410.0	1410.1	1409.6	1409.2	1408.8	1408.3
152.5°	1432.3	1433.3	1434.2	1434.1	1433.0	1431.9	1430.7	1429.6
155°	1464.5	1465.8	1467.1	1466.9	1465.4	1463.9	1462.3	1460.8
157.5°	1492.5	1494.0	1495.6	1495.4	1493.4	1491.3	1489.2	1487.2
160°	1508.4	1510.0	1511.6	1511.5	1509.6	1507.8	1505.9	1504.1
162.5°	1523.0	1524.7	1526.5	1526.5	1524.9	1523.3	1521.7	1520.0
165°	1542.4	1544.4	1546.5	1546.6	1544.8	1543.0	1541.2	1539.3
167.5°	1557.3	1559.4	1561.6	1561.6	1559.4	1557.3	1555.3	1553.2
170°	1565.8	1567.9	1569.9	1569.9	1567.9	1565.8	1563.7	1561.7
172.5°	1571.5	1573.5	1575.6	1575.5	1573.2	1570.9	1568.6	1566.3
175°	1578.2	1580.0	1581.9	1581.7	1579.6	1577.5	1575.5	1573.4
177.5°	1580.6	1582.4	1584.0	1583.8	1581.8	1579.6	1577.5	1575.5
180°	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2

(END OF REPORT)