

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: P331950-830

Luminaire Tested: **S123DIP-S560D1195U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331950-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIP-S560D1195U830-4F0-1E-UDD-D1  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

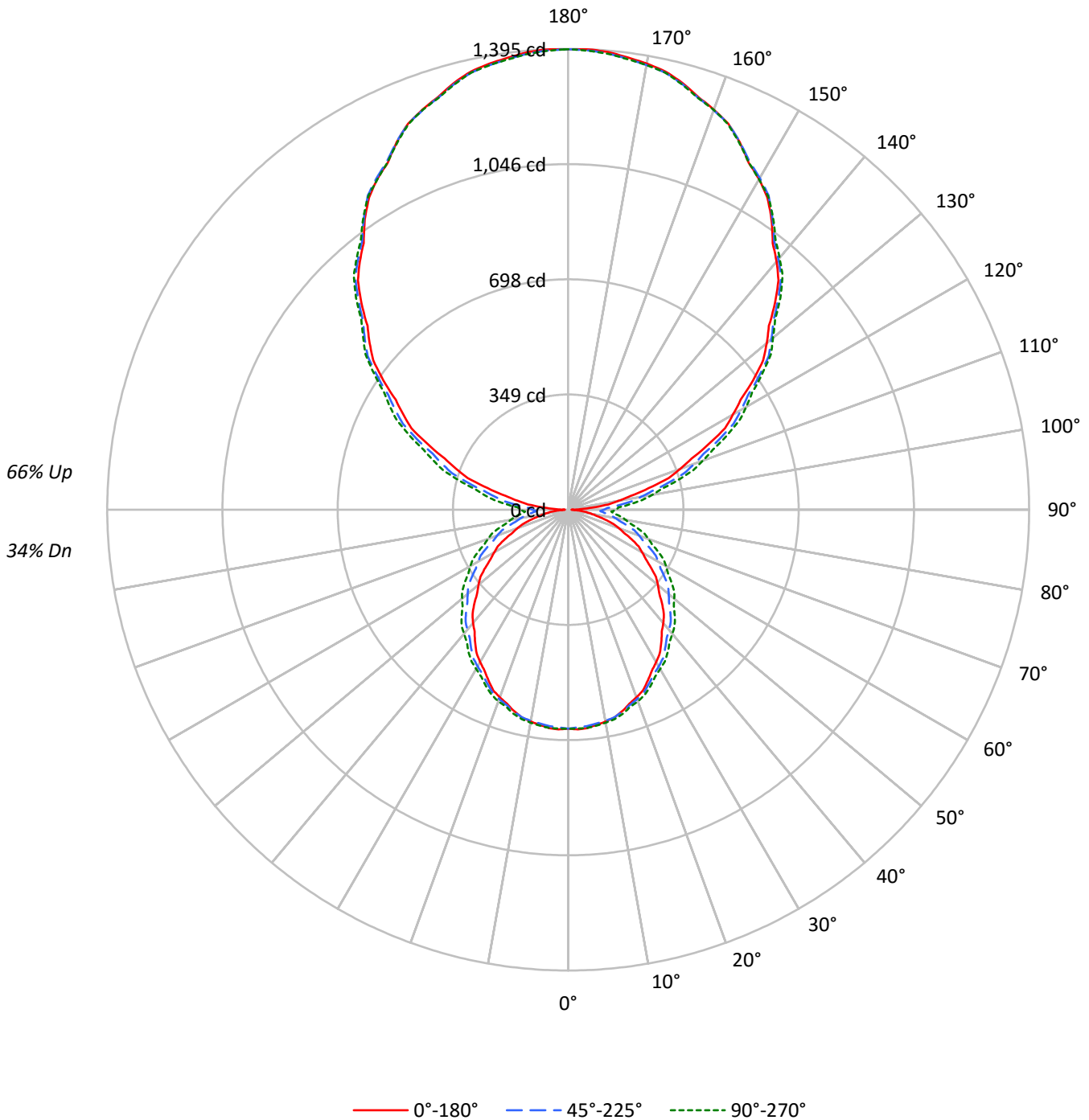
Lumens per Lamp: N/A  
Luminaire Lumens: 6094.0 lumens  
Efficiency: N/A  
Efficacy: 123.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect  
  
Input Watts (W): 49.4  
Input Voltage (V): 120  
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41
1	93	89	85	81	84	80	77	74	64	61	59	49	47	46	35	34	33
2	85	77	71	66	76	70	64	60	56	52	48	42	40	38	30	29	27
3	77	68	60	54	69	61	55	50	49	44	40	37	34	32	27	25	23
4	70	60	52	46	63	54	47	42	43	38	34	33	30	27	24	21	20
5	64	53	45	39	58	48	41	36	38	33	29	30	26	23	21	19	17
6	59	47	39	33	53	43	36	31	34	29	25	27	23	20	19	17	15
7	55	42	35	29	49	39	32	27	31	26	22	24	20	18	18	15	13
8	51	38	31	25	45	35	28	23	28	23	19	22	18	16	16	14	12
9	47	35	28	23	42	32	25	21	26	21	17	20	16	14	15	12	10
10	44	32	25	20	39	29	23	19	24	19	15	19	15	12	14	11	9

**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	1.0
10°-20°	179.1	2.9
20°-30°	267.9	4.4
30°-40°	319.9	5.2
40°-50°	334.7	5.5
50°-60°	314.1	5.2
60°-70°	262.3	4.3
70°-80°	187.7	3.1
80°-90°	116.1	1.9
90°-100°	161.1	2.6
100°-110°	323.4	5.3
110°-120°	496.8	8.2
120°-130°	627.8	10.3
130°-140°	692.4	11.4
140°-150°	673.8	11.1
150°-160°	565.6	9.3
160°-170°	376.5	6.2
170°-180°	131.8	2.2
0°-30°	509.8	8.4
0°-40°	829.7	13.6
0°-60°	1478.6	24.3
0°-90°	2044.7	33.6
90°-120°	981.3	16.1
90°-150°	2975.3	48.8
90°-180°	4049.0	66.4
0°-180°	6094.0	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°	10	57	108	136	146	10
95°	73	109	152	178	186	79
105°	252	273	313	332	342	270
115°	469	482	505	522	528	464
125°	683	688	705	716	717	609
135°	885	891	898	906	908	682
145°	1073	1074	1078	1082	1081	670
155°	1228	1228	1229	1232	1225	565
165°	1337	1334	1334	1340	1333	377
175°	1391	1387	1386	1392	1385	132
180°	1394	1394	1394	1394	1394	



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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°	19.4	27.9	36.4	44.9	53.3	62.0	70.8	79.6	88.4	97.3	102.9
90°	10.5	20.7	31.1	41.4	51.7	62.5	73.8	85.2	96.5	107.8	114.3
92.5°	35.3	44.0	52.8	61.5	70.3	79.6	89.4	99.3	109.1	119.0	125.2
95°	72.6	80.5	88.5	96.4	104.4	113.3	123.1	132.9	142.7	152.5	158.4
97.5°	121.9	128.8	135.6	142.6	149.5	157.4	166.4	175.2	184.2	193.1	199.0
100°	155.4	162.0	168.6	175.2	181.8	189.5	198.0	206.6	215.2	223.8	229.2
102.5°	194.3	199.8	205.3	210.8	216.3	223.5	232.3	241.2	250.1	258.9	264.1
105°	252.2	256.6	260.9	265.2	269.6	276.3	285.3	294.5	303.5	312.6	317.1
107.5°	318.8	322.3	325.9	329.5	333.0	338.6	345.9	353.4	360.8	368.3	373.3
110°	360.2	363.6	367.0	370.3	373.7	378.9	385.8	392.7	399.6	406.5	411.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	404.1	406.7	409.3	412.1	414.7	419.1	425.5	431.7	438.0	444.2	449.4
115°	469.0	471.6	474.4	477.0	479.7	483.6	488.9	494.2	499.5	504.8	508.9
117.5°	535.1	536.7	538.4	540.1	541.8	545.0	549.8	554.6	559.3	564.1	567.9
120°	575.6	577.9	580.1	582.4	584.7	587.9	591.9	596.0	600.1	604.2	607.7
122.5°	618.6	620.1	621.5	623.0	624.5	627.5	631.9	636.3	640.6	645.1	648.0
125°	683.3	684.1	684.8	685.5	686.3	688.7	692.9	697.0	701.2	705.4	707.8
127.5°	743.8	745.2	746.6	748.0	749.4	751.8	755.1	758.4	761.7	765.0	766.8
130°	784.1	785.9	787.7	789.5	791.3	793.3	795.9	798.3	800.8	803.2	805.3
132.5°	823.8	825.8	827.6	829.5	831.5	833.4	835.5	837.5	839.5	841.6	843.3
135°	885.2	886.5	887.8	889.1	890.4	891.8	893.3	894.8	896.4	897.9	899.8
137.5°	942.0	943.1	944.1	945.3	946.4	947.7	949.3	950.9	952.6	954.2	955.7
140°	980.8	982.0	983.3	984.5	985.7	986.7	987.4	988.2	988.9	989.6	991.7
142.5°	1016.8	1017.9	1019.0	1020.0	1021.2	1021.9	1022.5	1023.0	1023.5	1024.1	1026.0
145°	1072.8	1073.2	1073.5	1073.8	1074.1	1074.7	1075.4	1076.1	1076.9	1077.6	1078.6
147.5°	1121.2	1122.1	1122.9	1123.8	1124.7	1125.5	1126.1	1126.8	1127.5	1128.2	1128.6
150°	1155.4	1155.8	1156.3	1156.8	1157.3	1157.8	1158.3	1158.8	1159.2	1159.7	1159.7
152.5°	1183.4	1184.1	1184.8	1185.4	1186.1	1186.6	1186.8	1187.2	1187.5	1187.8	1188.2
155°	1227.7	1227.7	1227.7	1227.7	1227.7	1227.8	1228.0	1228.2	1228.5	1228.7	1229.7
157.5°	1265.3	1265.0	1264.7	1264.4	1264.1	1264.0	1264.3	1264.5	1264.7	1264.9	1265.9
160°	1288.9	1288.5	1288.0	1287.5	1287.0	1286.8	1286.8	1286.8	1286.8	1286.8	1288.0
162.5°	1309.9	1309.3	1308.6	1308.0	1307.3	1307.0	1307.2	1307.4	1307.6	1307.8	1309.0
165°	1337.2	1336.4	1335.7	1334.9	1334.3	1333.9	1333.9	1333.9	1333.9	1333.9	1335.3
167.5°	1358.9	1357.8	1356.9	1355.9	1354.9	1354.5	1354.7	1354.9	1355.1	1355.3	1356.8
170°	1371.1	1370.1	1369.1	1368.2	1367.2	1366.7	1366.7	1366.7	1366.7	1366.7	1368.4
172.5°	1380.7	1379.8	1378.8	1377.8	1376.9	1376.4	1376.4	1376.4	1376.4	1376.4	1377.9
175°	1390.8	1389.9	1388.8	1387.9	1387.0	1386.4	1386.4	1386.4	1386.4	1386.4	1387.9
177.5°	1395.0	1394.2	1393.5	1392.6	1391.9	1391.5	1391.5	1391.5	1391.5	1391.5	1392.6
180°	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1



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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°	108.6	114.2	119.8	123.5	125.3	127.0	128.7	130.4
90°	120.7	127.1	133.6	137.8	140.0	142.0	144.1	146.2
92.5°	131.2	137.3	143.5	147.1	148.3	149.5	150.6	151.8
95°	164.4	170.3	176.3	180.1	181.7	183.3	184.9	186.5
97.5°	204.9	210.8	216.7	220.4	221.9	223.4	224.9	226.4
100°	234.6	240.0	245.3	249.0	251.2	253.3	255.3	257.4
102.5°	269.4	274.7	279.9	283.2	284.7	286.3	287.8	289.3
105°	321.6	326.1	330.5	333.8	335.7	337.6	339.6	341.5
107.5°	378.3	383.4	388.5	391.6	392.8	393.9	395.0	396.2
110°	416.8	422.0	427.1	430.1	430.8	431.7	432.4	433.3





TEST NUMBER: P331950-830

CATALOG NUMBER: S123DIP-S560D1195U830-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	454.7	459.9	465.1	468.3	469.7	471.0	472.3	473.6
115°	512.9	517.1	521.1	523.8	524.8	525.8	526.9	527.9
117.5°	571.7	575.4	579.2	581.4	581.9	582.5	583.1	583.6
120°	611.1	614.5	617.9	620.0	620.7	621.2	621.9	622.5
122.5°	650.9	653.8	656.8	658.5	658.9	659.4	659.8	660.3
125°	710.1	712.6	714.9	716.2	716.3	716.5	716.7	716.8
127.5°	768.6	770.4	772.2	773.2	773.1	773.1	773.1	773.0
130°	807.4	809.5	811.6	812.3	811.5	810.8	810.0	809.3
132.5°	845.1	846.8	848.6	849.3	849.1	848.9	848.7	848.5
135°	901.7	903.6	905.6	906.6	907.0	907.3	907.7	908.0
137.5°	957.2	958.8	960.3	961.0	960.8	960.7	960.6	960.5
140°	993.9	996.1	998.2	998.9	998.0	997.1	996.2	995.2
142.5°	1027.9	1029.8	1031.7	1032.4	1031.9	1031.4	1030.9	1030.4
145°	1079.7	1080.7	1081.8	1082.1	1081.8	1081.5	1081.1	1080.8
147.5°	1129.0	1129.4	1129.7	1129.4	1128.6	1127.8	1126.8	1126.0
150°	1159.7	1159.7	1159.7	1159.1	1158.0	1156.9	1155.7	1154.6
152.5°	1188.5	1188.9	1189.3	1188.9	1187.7	1186.5	1185.3	1184.1
155°	1230.7	1231.6	1232.7	1232.3	1230.6	1228.9	1227.2	1225.4
157.5°	1266.9	1267.9	1268.9	1268.8	1267.4	1266.0	1264.7	1263.3
160°	1289.2	1290.4	1291.7	1291.8	1290.8	1289.8	1288.8	1287.9
162.5°	1310.2	1311.5	1312.7	1312.5	1310.9	1309.4	1307.8	1306.3
165°	1336.8	1338.2	1339.7	1339.5	1337.8	1336.1	1334.5	1332.8
167.5°	1358.3	1359.8	1361.3	1361.3	1359.8	1358.3	1356.8	1355.3
170°	1370.1	1371.9	1373.6	1373.6	1371.9	1370.1	1368.4	1366.7
172.5°	1379.4	1380.9	1382.4	1382.3	1380.5	1378.8	1377.1	1375.5
175°	1389.3	1390.8	1392.2	1392.1	1390.4	1388.7	1387.0	1385.3
177.5°	1393.8	1395.0	1396.1	1396.0	1394.7	1393.3	1391.9	1390.6
180°	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1	1394.1

(END OF REPORT)