

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: P331952-840

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331952-840  
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-F  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1195 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7161.4 lumens  
Efficiency: N/A  
Efficacy: 145.0 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

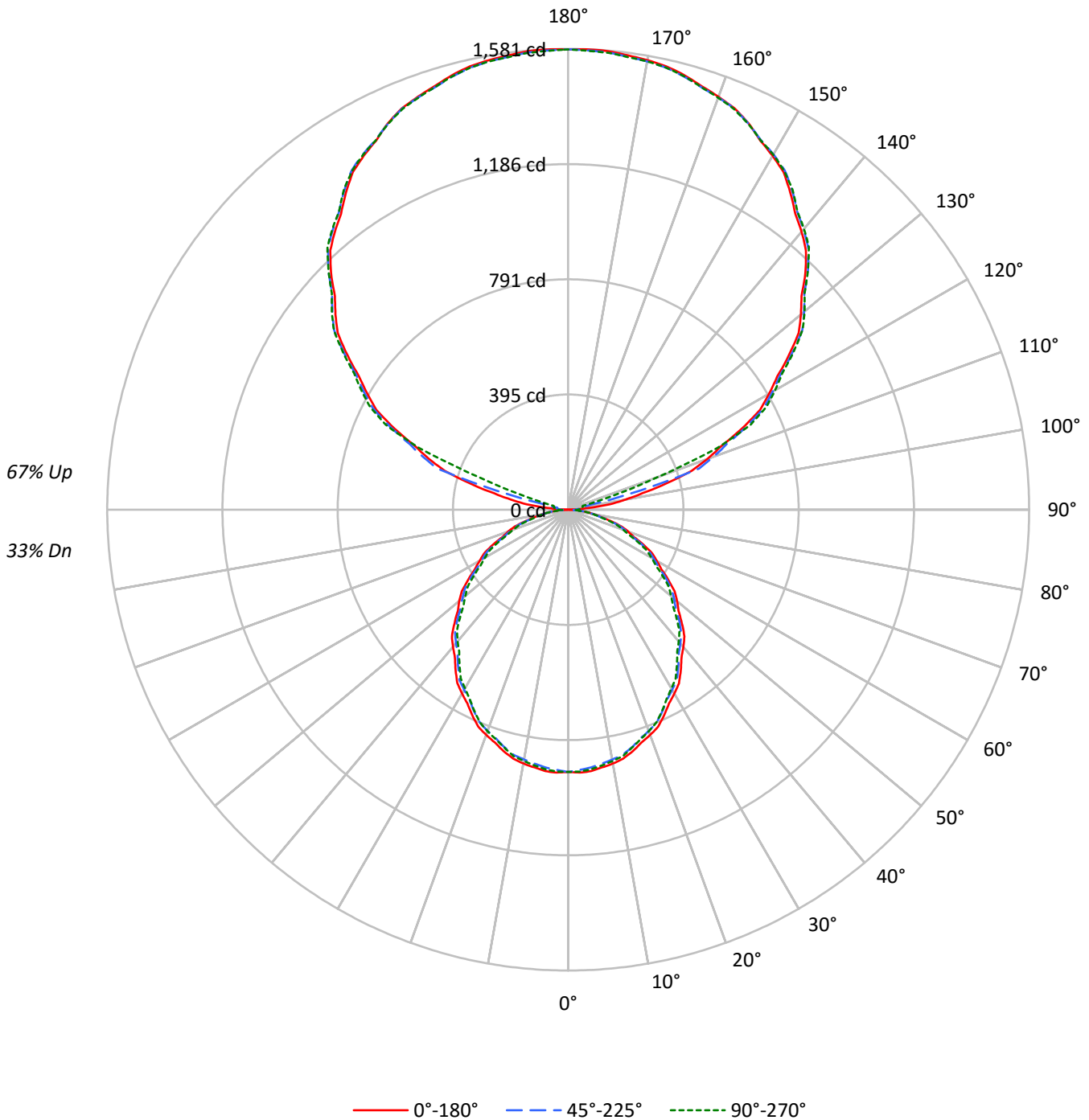
Input Watts (W): 49.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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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	93	93	93	93	74	74	74	56	56	56	40	40	40	33
1	94	90	86	82	84	81	78	75	64	62	60	49	48	47	35	35	34	27
2	85	78	72	67	77	71	66	61	56	53	50	43	41	39	31	30	28	23
3	78	69	62	56	70	62	56	51	50	45	42	38	35	33	28	26	24	19
4	71	61	53	47	64	55	48	43	44	39	36	34	31	28	25	23	21	17
5	65	54	46	40	58	49	42	37	39	34	31	30	27	24	22	20	18	14
6	60	48	40	35	54	44	37	32	35	30	26	27	24	21	20	18	16	13
7	55	43	36	30	50	39	33	28	32	27	23	25	21	19	18	16	14	11
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	14	13	10
9	48	36	29	24	43	33	26	22	27	22	18	21	17	15	15	13	11	9
10	44	33	26	21	40	30	24	19	24	20	16	19	16	13	14	12	10	8

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

	0°	45°	90°
0°	9684	9684	9684
5°	9729	9596	9662
10°	9664	9512	9571
15°	9551	9404	9423
20°	9419	9251	9260
25°	9242	9069	9049
30°	9047	8866	8797
35°	8843	8650	8539
40°	8630	8413	8283
45°	8397	8196	7995
50°	8162	7927	7708
55°	7854	7651	7418
60°	7543	7326	7093
65°	7272	6976	6757
70°	6864	6571	6279
75°	6276	6047	5793
80°	5659	5424	5368
85°	4965	4780	4594



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	84.7	1.2
10°-20°	239.3	3.3
20°-30°	353.5	4.9
30°-40°	412.9	5.8
40°-50°	415.1	5.8
50°-60°	364.6	5.1
60°-70°	271.7	3.8
70°-80°	154.8	2.2
80°-90°	48.9	0.7
90°-100°	57.4	0.8
100°-110°	273.6	3.8
110°-120°	657.3	9.2
120°-130°	837.0	11.7
130°-140°	894.3	12.5
140°-150°	836.3	11.7
150°-160°	674.6	9.4
160°-170°	435.4	6.1
170°-180°	150.0	2.1
0°-30°	677.5	9.5
0°-40°	1090.4	15.2
0°-60°	1870.2	26.1
0°-90°	2345.5	32.8
90°-120°	988.3	13.8
90°-150°	3555.9	49.7
90°-180°	4816.0	67.2
0°-180°	7161.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	900	900	900	900	900	
5°	900	896	888	895	894	85
15°	857	854	844	850	846	242
25°	778	773	764	764	762	358
35°	673	668	658	654	650	421
45°	552	548	538	529	525	426
55°	418	417	408	399	395	375
65°	286	281	274	268	265	282
75°	151	148	145	142	139	161
85°	40	39	39	37	37	44
90°	1	13	28	33	35	6
95°	72	27	36	44	44	88
105°	350	356	257	61	52	371
115°	656	663	674	685	690	647
125°	924	934	939	941	943	825
135°	1151	1158	1163	1166	1163	886
145°	1328	1336	1339	1341	1341	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	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	899.7	899.7	899.7	899.7	899.7	899.7	899.7	899.7	899.7	899.7	899.7
2.5°	902.7	902.2	901.7	901.1	900.6	899.5	898.0	896.5	895.0	893.5	894.8
5°	900.4	899.6	898.7	897.9	897.0	895.6	893.7	891.8	890.0	888.1	889.8
7.5°	891.6	890.8	889.9	889.1	888.2	886.8	884.8	882.8	880.9	879.0	880.5
10°	884.2	883.3	882.5	881.6	880.8	879.2	877.0	874.7	872.5	870.3	871.8
12.5°	874.3	873.5	872.8	872.1	871.4	870.0	867.9	865.8	863.7	861.6	862.7
15°	857.1	856.5	855.8	855.1	854.3	852.9	850.7	848.5	846.2	843.9	845.4
17.5°	837.2	836.3	835.4	834.5	833.5	832.0	829.8	827.6	825.4	823.0	824.0
20°	822.3	821.3	820.2	819.2	818.2	816.6	814.4	812.1	809.8	807.6	808.3
22.5°	805.6	804.6	803.5	802.5	801.4	799.8	797.6	795.4	793.1	790.9	791.4
25°	778.2	777.2	776.2	775.2	774.1	772.4	770.2	768.0	765.8	763.6	763.7
27.5°	749.0	748.0	747.0	746.0	745.0	743.3	740.8	738.5	736.1	733.7	733.8
30°	727.9	727.1	726.2	725.4	724.5	722.9	720.4	718.0	715.7	713.3	713.3
32.5°	706.9	705.8	704.6	703.5	702.4	700.8	699.0	697.1	695.3	693.5	692.5
35°	673.0	672.0	671.0	669.9	668.9	667.2	665.0	662.8	660.6	658.3	657.3
37.5°	638.3	637.0	635.7	634.4	633.1	631.4	629.0	626.8	624.5	622.3	621.1
40°	614.2	613.2	612.2	611.2	610.1	608.3	605.9	603.6	601.2	598.7	597.3
42.5°	590.1	589.0	587.7	586.5	585.4	583.6	581.2	578.9	576.4	574.0	572.6
45°	551.6	550.9	550.2	549.5	548.8	547.3	545.1	542.9	540.7	538.4	536.3
47.5°	513.3	512.3	511.4	510.4	509.4	507.8	505.7	503.6	501.5	499.4	497.4
50°	487.4	486.5	485.6	484.7	483.9	482.4	480.1	477.9	475.6	473.4	471.5
52.5°	460.1	459.5	459.0	458.4	457.8	456.3	453.9	451.6	449.2	446.9	445.2
55°	418.5	418.3	418.2	418.0	417.8	416.6	414.3	412.1	409.9	407.7	405.8
57.5°	378.9	378.3	377.7	377.2	376.6	375.4	373.5	371.8	370.0	368.2	366.6
60°	350.4	350.2	350.1	349.9	349.7	348.6	346.6	344.5	342.4	340.3	338.8
62.5°	325.1	324.6	324.2	323.8	323.3	322.0	319.9	317.9	315.8	313.8	312.3
65°	285.5	284.6	283.8	282.9	282.1	280.7	279.0	277.3	275.6	273.9	272.5
67.5°	243.5	242.8	242.0	241.3	240.4	239.4	238.1	236.8	235.5	234.3	233.1
70°	218.1	217.1	216.1	215.1	214.0	213.0	212.0	211.0	209.8	208.8	207.6
72.5°	191.6	190.8	190.1	189.2	188.5	187.5	186.4	185.2	184.0	182.9	181.8
75°	150.9	150.2	149.5	148.8	148.1	147.5	146.9	146.4	145.9	145.4	144.6
77.5°	114.8	114.4	114.0	113.7	113.3	112.8	112.2	111.6	110.9	110.3	109.8
80°	91.3	90.8	90.3	89.8	89.2	88.8	88.5	88.1	87.8	87.5	87.3
82.5°	68.4	68.3	68.2	68.1	68.0	67.9	67.9	67.8	67.7	67.7	67.3
85°	40.2	39.9	39.6	39.2	38.9	38.7	38.7	38.7	38.7	38.7	38.4
87.5°	16.4	16.5	16.6	16.7	16.8	17.1	17.7	18.2	18.7	19.3	19.3
90°	1.2	3.7	6.4	9.0	11.6	14.6	18.0	21.4	24.7	28.2	29.2
92.5°	21.8	21.1	20.4	19.6	18.9	19.8	22.4	24.9	27.5	30.0	31.7
95°	71.6	60.9	50.2	39.5	28.8	24.9	27.8	30.6	33.5	36.4	38.2
97.5°	143.8	139.1	134.2	129.5	124.6	112.9	94.1	75.3	56.6	37.8	39.9
100°	198.2	203.5	208.7	213.9	219.1	201.4	160.8	120.1	79.4	38.7	40.8
102.5°	260.2	264.0	267.7	271.5	275.3	254.9	210.5	166.0	121.6	77.2	70.7
105°	349.6	352.5	355.4	358.2	361.1	350.8	327.3	303.9	280.4	256.9	210.8
107.5°	443.9	446.3	448.6	450.8	453.1	456.2	459.9	463.5	467.3	471.0	437.1
110°	506.9	509.0	511.0	513.1	515.2	517.7	520.6	523.4	526.2	529.2	520.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	566.9	568.8	570.7	572.6	574.4	576.8	579.7	582.6	585.4	588.2	588.4
115°	655.9	657.4	658.9	660.6	662.1	664.1	666.4	668.7	671.2	673.5	676.1
117.5°	741.9	743.9	745.8	747.8	749.7	751.2	752.5	753.7	754.9	756.1	758.1
120°	795.5	797.8	800.2	802.5	804.9	806.5	807.2	808.0	808.8	809.5	811.6
122.5°	849.9	851.8	853.7	855.7	857.7	859.1	860.1	861.1	862.0	863.0	864.5
125°	924.5	926.7	928.7	930.8	932.9	934.4	935.4	936.5	937.6	938.6	939.2
127.5°	996.8	998.9	1001.0	1003.1	1005.1	1006.8	1008.0	1009.4	1010.6	1011.8	1012.7
130°	1041.9	1044.0	1046.0	1048.1	1050.2	1051.8	1052.8	1053.9	1054.9	1055.9	1057.0
132.5°	1085.0	1087.1	1089.2	1091.3	1093.4	1094.8	1095.7	1096.5	1097.3	1098.2	1099.2
135°	1150.9	1152.6	1154.1	1155.7	1157.2	1158.5	1159.6	1160.6	1161.6	1162.8	1163.5
137.5°	1207.3	1209.3	1211.2	1213.3	1215.3	1216.5	1217.1	1217.7	1218.2	1218.8	1220.0
140°	1244.9	1246.4	1248.0	1249.5	1251.1	1252.2	1253.0	1253.8	1254.7	1255.4	1256.5
142.5°	1279.6	1281.1	1282.7	1284.2	1285.9	1287.0	1287.8	1288.6	1289.4	1290.1	1291.0
145°	1328.2	1330.0	1331.8	1333.6	1335.4	1336.7	1337.2	1337.7	1338.2	1338.7	1339.2
147.5°	1373.9	1375.1	1376.3	1377.5	1378.7	1379.6	1380.1	1380.6	1381.1	1381.6	1382.2
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°	899.7	899.7	899.7	899.7	899.7	899.7	899.7	899.7
2.5°	896.3	897.6	899.0	899.6	899.5	899.3	899.2	899.1
5°	891.5	893.2	894.9	895.6	895.2	894.9	894.6	894.2
7.5°	882.0	883.5	885.1	885.8	885.6	885.3	885.1	884.9
10°	873.3	874.9	876.5	877.1	876.8	876.4	876.1	875.7
12.5°	863.8	865.1	866.2	866.6	866.4	866.2	866.0	865.8
15°	846.8	848.1	849.5	849.6	848.6	847.6	846.6	845.6
17.5°	825.1	826.0	827.0	827.2	826.9	826.5	826.1	825.7
20°	809.0	809.7	810.3	810.4	809.9	809.4	808.9	808.4
22.5°	792.0	792.5	793.1	793.0	792.4	791.7	791.1	790.4
25°	763.9	764.1	764.2	764.1	763.6	763.1	762.4	761.9
27.5°	734.0	734.1	734.2	734.0	733.3	732.7	732.0	731.3
30°	713.3	713.3	713.3	712.7	711.4	710.2	709.0	707.8
32.5°	691.6	690.5	689.5	688.7	688.1	687.5	686.8	686.2
35°	656.2	655.2	654.2	653.3	652.4	651.6	650.7	649.8
37.5°	619.8	618.5	617.3	616.4	615.9	615.3	614.8	614.2
40°	596.0	594.6	593.3	592.2	591.5	590.9	590.2	589.5
42.5°	571.3	569.9	568.5	567.4	566.7	566.1	565.4	564.7
45°	534.3	532.2	530.2	528.7	527.9	526.9	526.1	525.2
47.5°	495.3	493.3	491.3	489.9	489.2	488.4	487.7	486.9
50°	469.7	467.8	465.9	464.4	463.3	462.3	461.3	460.3
52.5°	443.6	442.0	440.4	439.0	438.0	437.0	436.0	434.9
55°	403.8	402.0	400.1	398.7	397.9	397.0	396.2	395.3
57.5°	364.9	363.1	361.5	360.1	359.1	358.2	357.2	356.2
60°	337.3	335.8	334.2	333.0	332.1	331.2	330.4	329.5
62.5°	310.6	309.1	307.6	306.5	305.9	305.4	304.8	304.2
65°	271.0	269.7	268.3	267.4	266.9	266.4	265.9	265.3
67.5°	231.9	230.7	229.4	228.4	227.7	227.0	226.3	225.6
70°	206.4	205.3	204.1	203.0	202.2	201.3	200.5	199.5
72.5°	180.8	179.7	178.6	177.8	177.4	176.9	176.5	176.0
75°	143.7	142.9	142.0	141.3	140.8	140.3	139.8	139.3
77.5°	109.2	108.6	108.0	107.7	107.7	107.7	107.7	107.7
80°	87.1	86.8	86.7	86.6	86.6	86.6	86.6	86.6
82.5°	67.0	66.7	66.3	66.1	66.0	65.8	65.7	65.6
85°	38.0	37.7	37.3	37.2	37.2	37.2	37.2	37.2
87.5°	19.4	19.5	19.5	19.6	19.7	19.8	19.9	20.0
90°	30.2	31.3	32.3	33.1	33.6	34.1	34.6	35.2
92.5°	33.3	35.0	36.8	37.7	38.0	38.4	38.7	39.0
95°	40.0	41.8	43.6	44.5	44.5	44.5	44.5	44.5
97.5°	41.9	44.0	46.2	47.3	47.6	47.9	48.1	48.4
100°	42.9	44.9	47.1	48.3	48.5	48.8	49.0	49.3
102.5°	64.2	57.8	51.3	48.4	48.8	49.3	49.8	50.2
105°	164.6	118.5	72.3	49.6	50.1	50.6	51.1	51.6
107.5°	403.2	369.4	335.6	301.2	266.5	231.7	196.9	162.2
110°	511.9	503.3	494.7	471.8	434.5	397.2	359.9	322.7





TEST NUMBER: P331952-840

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

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	588.5	588.8	589.0	585.0	577.1	569.3	561.4	553.5
115°	678.6	681.3	683.9	685.7	686.7	687.8	688.8	689.8
117.5°	760.2	762.3	764.4	765.6	765.8	766.0	766.2	766.4
120°	813.7	815.8	817.9	818.9	818.9	818.9	818.9	818.9
122.5°	866.0	867.5	868.9	869.7	869.9	870.1	870.4	870.6
125°	939.7	940.2	940.7	941.2	941.7	942.3	942.8	943.3
127.5°	1013.5	1014.3	1015.1	1015.3	1014.8	1014.3	1013.8	1013.2
130°	1058.0	1059.0	1060.2	1060.4	1059.9	1059.3	1058.8	1058.3
132.5°	1100.2	1101.4	1102.4	1102.5	1101.8	1101.1	1100.3	1099.5
135°	1164.3	1165.1	1165.9	1165.9	1165.1	1164.3	1163.5	1162.8
137.5°	1221.3	1222.5	1223.8	1224.2	1223.7	1223.1	1222.6	1222.0
140°	1257.5	1258.5	1259.6	1259.8	1259.3	1258.8	1258.3	1257.8
142.5°	1291.8	1292.6	1293.4	1293.5	1292.8	1292.0	1291.3	1290.6
145°	1339.8	1340.3	1340.8	1341.0	1341.0	1341.0	1341.0	1341.0
147.5°	1382.7	1383.2	1383.7	1383.4	1382.2	1381.0	1379.8	1378.6
150°	1409.0	1409.5	1410.0	1409.9	1409.1	1408.4	1407.5	1406.7
152.5°	1432.3	1433.3	1434.2	1434.1	1432.9	1431.7	1430.5	1429.3
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)