

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: P332134

Luminaire Tested: **S123DIW-S560D1030U835-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332134  
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-S560D1030U835-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1030 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6489.6 lumens  
Efficiency: N/A  
Efficacy: 143.6 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

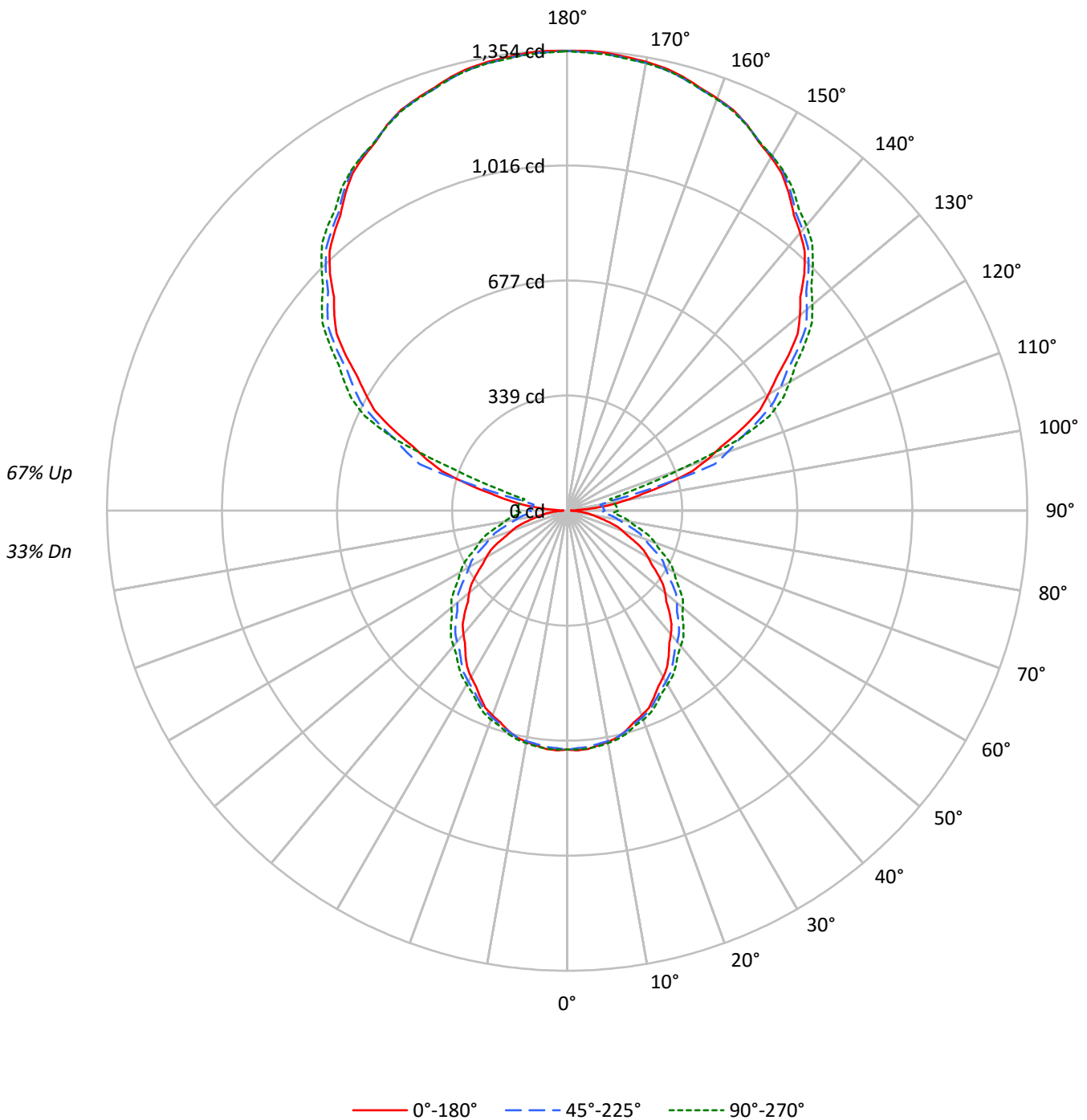
Input Watts (W): 45.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	57	57	57	41	41	41	33
1	93	89	85	81	84	80	77	74	64	61	59	49	47	46	35	34	33	27
2	85	77	71	66	76	70	64	60	55	52	48	42	40	38	30	29	27	22
3	77	68	60	54	69	61	55	50	49	44	40	37	34	31	27	25	23	18
4	70	60	52	46	63	54	47	42	43	38	34	33	30	27	24	21	20	15
5	64	53	45	39	58	48	41	36	38	33	29	29	26	23	21	19	17	13
6	59	47	39	33	53	43	36	31	34	29	25	27	23	20	19	17	15	12
7	55	42	35	29	49	39	32	27	31	26	22	24	20	18	17	15	13	10
8	51	38	31	25	45	35	28	23	28	23	19	22	18	16	16	13	12	9
9	47	35	28	23	42	32	25	21	26	21	17	20	16	14	15	12	10	8
10	44	32	25	20	39	29	23	19	24	19	15	19	15	12	14	11	9	7

**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



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	66.7	1.0
10°-20°	190.0	2.9
20°-30°	284.2	4.4
30°-40°	339.4	5.2
40°-50°	355.1	5.5
50°-60°	333.2	5.1
60°-70°	278.3	4.3
70°-80°	199.1	3.1
80°-90°	122.5	1.9
90°-100°	123.7	1.9
100°-110°	289.0	4.5
110°-120°	599.3	9.2
120°-130°	737.4	11.4
130°-140°	775.0	11.9
140°-150°	717.9	11.1
150°-160°	577.5	8.9
160°-170°	372.7	5.7
170°-180°	128.4	2.0
0°-30°	540.9	8.3
0°-40°	880.3	13.6
0°-60°	1568.7	24.2
0°-90°	2168.7	33.4
90°-120°	1011.9	15.6
90°-150°	3242.2	50.0
90°-180°	4321.0	66.6
0°-180°	6489.6	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	59	111	140	150	10
95°	70	62	107	136	145	82
105°	305	330	277	130	130	324
115°	565	582	617	645	656	558
125°	794	803	828	846	854	709
135°	987	992	1005	1020	1022	759
145°	1138	1144	1146	1154	1157	712
155°	1252	1251	1252	1256	1250	577
165°	1321	1318	1317	1324	1318	373
175°	1352	1347	1348	1354	1347	129
180°	1352	1352	1352	1352	1352	



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**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	29.5	38.4	47.3	56.3	65.4	74.6	83.9	93.2	102.4	108.4
90°	11.0	21.5	32.1	42.7	53.3	64.3	75.9	87.5	99.1	110.7	117.3
92.5°	28.0	34.9	41.8	48.7	55.6	64.4	75.2	85.9	96.6	107.4	114.5
95°	69.7	67.2	64.7	62.2	59.6	63.8	74.6	85.4	96.2	107.0	113.8
97.5°	130.6	132.5	134.4	136.3	138.2	135.1	127.0	118.9	110.8	102.7	109.5
100°	176.6	186.6	196.5	206.4	216.3	207.7	180.8	153.8	126.8	99.8	106.5
102.5°	229.1	237.2	245.3	253.4	261.5	250.4	220.1	189.7	159.4	129.1	128.3
105°	305.4	312.0	318.5	325.1	331.6	328.5	315.7	303.0	290.2	277.4	242.7
107.5°	385.3	390.7	396.1	401.6	407.0	414.8	424.9	435.0	445.1	455.3	430.8
110°	438.5	443.3	448.2	453.0	457.9	465.0	474.2	483.5	492.7	502.0	499.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	489.9	494.1	498.2	502.3	506.4	513.0	522.0	531.0	540.0	549.0	553.4
115°	565.3	568.7	572.1	575.4	578.8	584.6	592.7	600.9	609.0	617.1	623.4
117.5°	638.9	641.8	644.7	647.6	650.5	655.4	662.1	668.9	675.7	682.5	688.3
120°	684.1	686.9	689.8	692.6	695.5	700.1	706.4	712.6	718.9	725.2	730.9
122.5°	730.7	732.7	734.8	736.9	739.0	743.2	749.4	755.6	761.8	767.9	773.0
125°	793.8	795.6	797.3	799.1	800.9	804.7	810.5	816.4	822.2	828.0	832.1
127.5°	855.6	857.3	858.9	860.5	862.1	865.5	870.6	875.8	881.0	886.1	890.2
130°	894.2	895.8	897.4	899.1	900.7	903.6	907.9	912.2	916.5	920.8	924.9
132.5°	930.6	932.3	934.1	935.8	937.6	940.2	943.6	947.0	950.5	953.9	957.9
135°	986.9	988.0	989.2	990.4	991.5	993.5	996.3	999.0	1001.8	1004.6	1008.3
137.5°	1034.9	1036.5	1038.0	1039.6	1041.2	1042.7	1044.3	1045.8	1047.3	1048.9	1052.7
140°	1066.4	1067.8	1069.1	1070.5	1071.8	1073.1	1074.2	1075.4	1076.6	1077.8	1081.2
142.5°	1096.2	1097.4	1098.6	1099.8	1101.0	1102.0	1102.7	1103.5	1104.3	1105.1	1108.1
145°	1137.8	1139.1	1140.5	1141.9	1143.3	1144.2	1144.7	1145.1	1145.6	1146.0	1147.8
147.5°	1176.2	1177.2	1178.2	1179.2	1180.3	1181.0	1181.4	1181.9	1182.3	1182.8	1183.6
150°	1200.3	1200.9	1201.6	1202.3	1202.9	1203.5	1203.9	1204.4	1204.8	1205.3	1205.7
152.5°	1222.0	1222.3	1222.6	1222.9	1223.2	1223.5	1223.8	1224.0	1224.3	1224.6	1225.4
155°	1252.5	1252.0	1251.6	1251.2	1250.7	1250.6	1250.8	1251.0	1251.3	1251.5	1252.6
157.5°	1276.2	1276.2	1276.1	1276.1	1276.0	1275.9	1275.7	1275.4	1275.2	1275.0	1276.3
160°	1290.7	1290.4	1290.2	1290.0	1289.8	1289.5	1289.3	1289.1	1288.9	1288.7	1290.0
162.5°	1304.3	1303.7	1303.2	1302.6	1302.0	1301.6	1301.4	1301.2	1300.9	1300.7	1302.2
165°	1320.8	1320.1	1319.5	1318.8	1318.1	1317.7	1317.4	1317.2	1317.0	1316.8	1318.6
167.5°	1333.6	1332.8	1331.9	1331.0	1330.1	1329.6	1329.6	1329.6	1329.6	1329.6	1331.4
170°	1340.9	1340.0	1339.1	1338.2	1337.3	1336.9	1336.9	1336.9	1336.9	1336.9	1338.6
172.5°	1345.7	1344.6	1343.6	1342.5	1341.4	1341.0	1341.1	1341.3	1341.5	1341.7	1343.5
175°	1351.9	1350.8	1349.7	1348.6	1347.5	1347.0	1347.2	1347.5	1347.7	1347.9	1349.5
177.5°	1353.5	1352.6	1351.8	1350.9	1350.0	1349.6	1349.8	1350.0	1350.1	1350.3	1351.8
180°	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9



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**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°	114.3	120.3	126.3	130.2	131.9	133.7	135.5	137.3
90°	124.0	130.7	137.4	141.8	144.0	146.1	148.2	150.4
92.5°	121.5	128.6	135.7	140.1	142.0	143.8	145.6	147.5
95°	120.7	127.5	134.3	138.6	140.3	142.0	143.7	145.4
97.5°	116.4	123.2	130.1	134.5	136.4	138.3	140.3	142.2
100°	113.2	120.0	126.7	131.0	132.9	134.9	136.8	138.7
102.5°	127.6	126.9	126.1	126.8	128.9	131.0	133.1	135.2
105°	207.9	173.2	138.5	122.1	124.1	126.0	128.0	130.0
107.5°	406.4	382.0	357.6	331.3	303.0	274.7	246.4	218.2
110°	496.1	493.2	490.3	473.5	442.9	412.4	381.8	351.3





TEST NUMBER: P332134

CATALOG NUMBER: S123DIW-S560D1030U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	557.8	562.2	566.7	566.2	561.0	555.8	550.5	545.3
115°	629.8	636.1	642.4	646.7	648.9	651.2	653.4	655.7
117.5°	694.2	700.0	705.8	709.5	711.0	712.5	714.0	715.5
120°	736.6	742.3	748.0	751.5	752.7	753.8	755.0	756.2
122.5°	778.0	783.0	788.1	791.3	792.6	794.0	795.4	796.7
125°	836.1	840.1	844.1	847.0	848.6	850.2	851.9	853.5
127.5°	894.3	898.4	902.5	904.9	905.6	906.3	907.0	907.7
130°	929.1	933.2	937.3	939.7	940.3	940.8	941.4	942.0
132.5°	961.9	965.9	969.9	972.1	972.7	973.2	973.7	974.3
135°	1012.0	1015.8	1019.5	1021.5	1021.6	1021.8	1022.0	1022.2
137.5°	1056.4	1060.2	1063.9	1066.0	1066.4	1066.8	1067.2	1067.6
140°	1084.7	1088.1	1091.6	1093.5	1093.9	1094.3	1094.7	1095.1
142.5°	1111.0	1114.0	1117.0	1118.6	1118.9	1119.1	1119.3	1119.6
145°	1149.6	1151.5	1153.3	1154.5	1155.2	1155.9	1156.5	1157.2
147.5°	1184.5	1185.4	1186.2	1186.4	1186.0	1185.6	1185.2	1184.8
150°	1206.2	1206.6	1207.1	1207.1	1206.8	1206.5	1206.1	1205.8
152.5°	1226.2	1227.0	1227.8	1227.7	1226.7	1225.8	1224.8	1223.9
155°	1253.7	1254.8	1256.0	1255.8	1254.5	1253.2	1251.8	1250.5
157.5°	1277.7	1279.0	1280.3	1280.1	1278.4	1276.7	1274.9	1273.2
160°	1291.3	1292.7	1294.0	1293.9	1292.3	1290.8	1289.2	1287.6
162.5°	1303.7	1305.3	1306.8	1306.8	1305.5	1304.1	1302.7	1301.3
165°	1320.3	1322.1	1323.9	1324.0	1322.5	1320.9	1319.3	1317.8
167.5°	1333.2	1335.0	1336.8	1336.8	1335.0	1333.2	1331.4	1329.6
170°	1340.4	1342.2	1344.0	1344.0	1342.2	1340.4	1338.6	1336.9
172.5°	1345.3	1347.0	1348.8	1348.7	1346.8	1344.8	1342.8	1340.9
175°	1351.0	1352.6	1354.2	1354.1	1352.3	1350.5	1348.7	1346.9
177.5°	1353.2	1354.6	1356.0	1355.9	1354.1	1352.3	1350.5	1348.7
180°	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9

(END OF REPORT)