

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: P332780-830

Luminaire Tested: **S124DIW-S795D470U830-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332780-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIW-S795D470U830-4F0-1E-UDD-F1  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 795 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 470 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

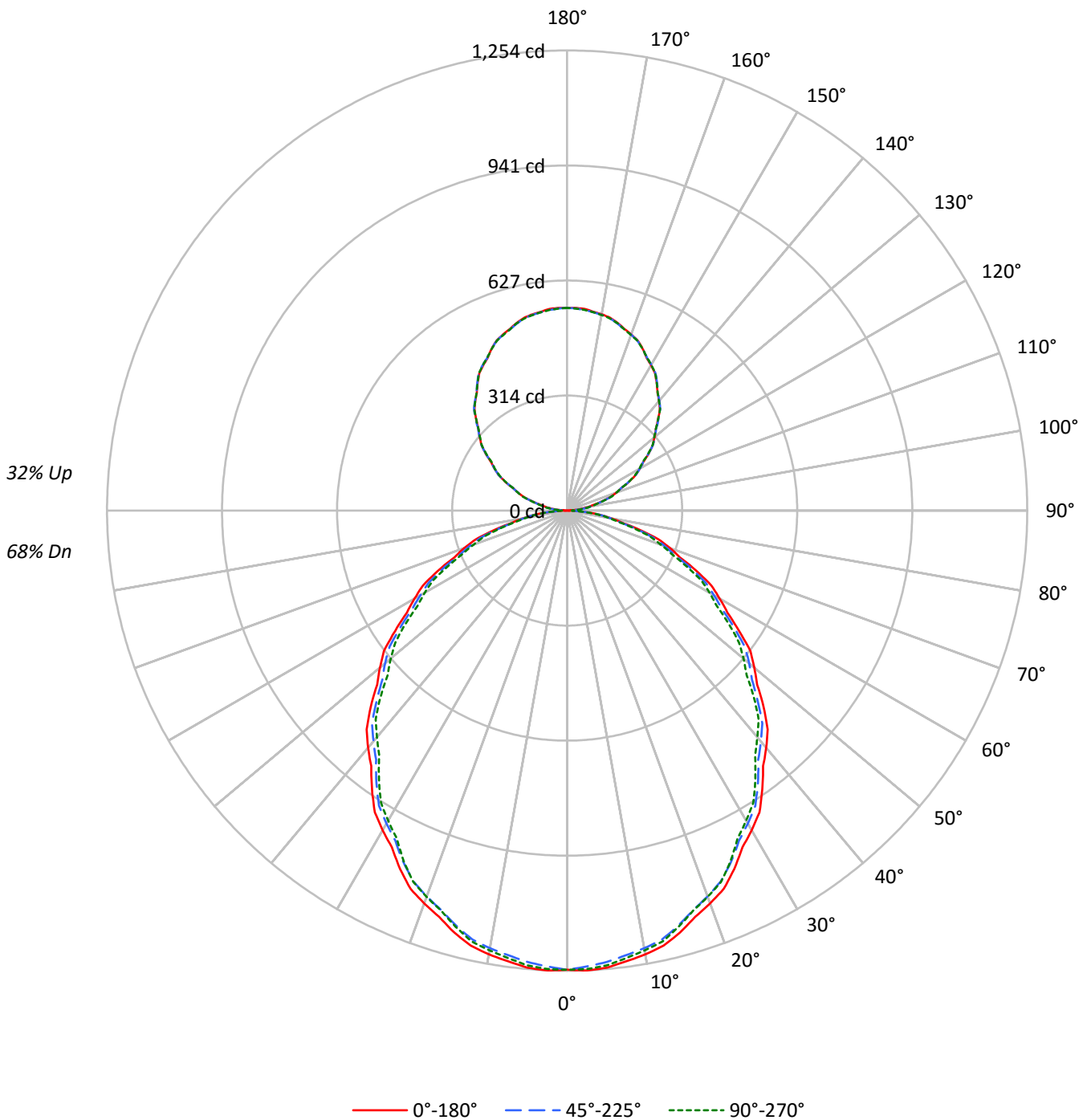
Lumens per Lamp: N/A  
Luminaire Lumens: 4744.5 lumens  
Efficiency: N/A  
Efficacy: 125.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Semi-Direct  
  
Input Watts (W): 37.7  
Input Voltage (V): 120  
Input Current (A<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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	72	72	72	68
1	102	97	93	90	96	92	88	85	82	79	77	72	70	69	64	62	61	57
2	93	85	79	73	87	80	75	70	72	67	63	64	60	57	56	54	51	48
3	85	75	67	61	79	71	64	58	63	58	53	56	52	48	50	47	44	40
4	77	66	58	52	73	63	55	50	56	50	46	50	45	42	45	41	38	35
5	71	59	51	44	67	56	48	43	50	44	39	45	40	36	40	36	33	30
6	66	53	45	39	62	50	43	37	46	39	34	41	36	32	36	32	29	26
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	26	23
8	56	44	36	30	53	42	34	29	38	32	27	34	29	25	31	26	23	21
9	53	40	32	27	50	38	31	26	35	29	24	31	26	23	28	24	21	19
10	49	37	29	24	47	35	28	24	32	26	22	29	24	21	26	22	19	17

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

	0°	45°	90°
0°	10101	10101	10101
5°	10131	10009	10083
10°	10067	9928	9977
15°	9947	9787	9812
20°	9784	9613	9620
25°	9600	9413	9386
30°	9374	9177	9093
35°	9140	8932	8814
40°	8896	8652	8495
45°	8643	8379	8218
50°	8361	8133	7882
55°	8058	7817	7562
60°	7753	7463	7237
65°	7412	7125	6837
70°	7027	6675	6413
75°	6441	6129	5973
80°	5732	5500	5360
85°	5011	4826	4733



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CATALOG NUMBER: S124DIW-S795D470U830-4F0-1E-UDD-F1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	117.8	2.5
10°-20°	332.0	7.0
20°-30°	488.6	10.3
30°-40°	568.1	12.0
40°-50°	568.1	12.0
50°-60°	496.9	10.5
60°-70°	369.0	7.8
70°-80°	209.7	4.4
80°-90°	62.2	1.3
90°-100°	36.4	0.8
100°-110°	107.9	2.3
110°-120°	183.1	3.9
120°-130°	241.5	5.1
130°-140°	271.2	5.7
140°-150°	266.5	5.6
150°-160°	224.1	4.7
160°-170°	149.1	3.1
170°-180°	52.2	1.1
0°-30°	938.5	19.8
0°-40°	1506.5	31.8
0°-60°	2571.5	54.2
0°-90°	3212.4	67.7
90°-120°	327.5	6.9
90°-150°	1106.7	23.3
90°-180°	1532.0	32.3
0°-180°	4744.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1251	1251	1251	1251	1251	
5°	1250	1246	1235	1245	1244	119
15°	1190	1185	1171	1176	1174	335
25°	1078	1070	1057	1057	1054	496
35°	927	920	906	899	894	580
45°	757	749	734	723	720	583
55°	572	569	555	544	537	513
65°	388	383	373	363	358	384
75°	206	202	196	193	192	219
85°	54	54	52	52	51	60
90°	1	6	9	12	13	4
95°	26	29	32	34	34	29
105°	100	100	102	103	104	106
115°	186	186	185	185	184	184
125°	271	271	271	270	269	242
135°	350	352	352	352	350	270
145°	425	427	427	427	425	266
155°	487	487	486	488	486	224
165°	530	529	528	530	529	149
175°	551	549	549	552	549	52
180°	552	552	552	552	552	



TEST NUMBER: P332780-830

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1251.2	1251.2	1251.2	1251.2	1251.2	1251.2	1251.2	1251.2	1251.2	1251.2	1251.2
2.5°	1254.4	1253.9	1253.3	1252.8	1252.3	1251.0	1249.1	1247.1	1245.1	1243.2	1244.9
5°	1250.2	1249.3	1248.4	1247.5	1246.6	1244.9	1242.5	1240.0	1237.6	1235.1	1237.6
7.5°	1238.6	1237.7	1236.8	1235.9	1235.0	1233.2	1230.5	1227.8	1225.0	1222.3	1224.3
10°	1228.1	1227.3	1226.3	1225.5	1224.6	1222.7	1219.7	1216.9	1214.0	1211.1	1212.9
12.5°	1214.5	1213.6	1212.7	1211.8	1211.0	1208.9	1205.9	1202.8	1199.8	1196.7	1198.6
15°	1190.1	1189.1	1188.3	1187.3	1186.5	1184.4	1181.0	1177.7	1174.3	1171.0	1172.3
17.5°	1160.6	1159.4	1158.3	1157.3	1156.1	1154.0	1150.8	1147.6	1144.4	1141.3	1142.2
20°	1138.9	1137.7	1136.7	1135.6	1134.4	1132.2	1128.9	1125.5	1122.2	1118.9	1119.6
22.5°	1115.7	1114.2	1112.7	1111.3	1109.7	1107.4	1104.0	1100.7	1097.3	1094.0	1095.2
25°	1077.7	1076.2	1074.6	1073.1	1071.5	1069.1	1066.0	1062.9	1059.8	1056.7	1056.9
27.5°	1034.4	1032.8	1031.2	1029.6	1028.0	1025.8	1022.8	1020.0	1017.1	1014.2	1013.6
30°	1005.6	1003.8	1002.0	1000.2	998.4	996.1	993.2	990.3	987.4	984.5	983.6
32.5°	975.1	973.5	971.9	970.3	968.7	966.3	963.3	960.2	957.2	954.0	953.0
35°	927.4	925.8	924.3	922.7	921.1	918.8	915.7	912.6	909.5	906.3	904.7
37.5°	877.0	875.6	874.2	872.8	871.3	868.9	865.6	862.2	858.9	855.5	853.8
40°	844.1	842.4	840.6	838.8	837.0	834.4	831.1	827.7	824.4	821.0	818.9
42.5°	808.9	807.8	806.7	805.7	804.6	802.2	798.5	794.8	791.1	787.4	784.9
45°	757.0	755.4	753.8	752.2	750.7	748.1	744.6	741.0	737.4	733.9	731.4
47.5°	702.6	701.5	700.5	699.4	698.3	696.2	692.9	689.6	686.3	683.0	680.1
50°	665.7	664.8	663.9	663.0	662.1	660.2	657.0	653.9	650.7	647.6	644.5
52.5°	629.6	628.6	627.5	626.4	625.3	623.1	619.8	616.5	613.2	609.9	607.2
55°	572.5	571.7	571.1	570.4	569.8	567.9	564.8	561.7	558.6	555.4	552.7
57.5°	517.9	517.2	516.4	515.7	514.9	512.9	509.9	506.8	503.8	500.7	498.1
60°	480.2	479.1	478.0	476.9	475.8	473.7	470.9	468.0	465.1	462.2	460.1
62.5°	443.4	442.4	441.5	440.5	439.6	437.6	434.5	431.4	428.4	425.3	423.5
65°	388.0	386.9	385.8	384.7	383.5	381.8	379.7	377.4	375.1	373.0	370.7
67.5°	332.2	331.2	330.2	329.1	328.2	326.6	324.4	322.3	320.2	318.0	315.8
70°	297.7	296.2	294.6	293.0	291.5	289.8	288.0	286.3	284.5	282.8	281.0
72.5°	260.9	259.3	257.8	256.2	254.6	253.2	251.8	250.2	248.8	247.4	246.0
75°	206.5	205.4	204.3	203.2	202.1	201.0	199.8	198.7	197.7	196.5	195.6
77.5°	154.6	154.1	153.6	153.2	152.6	151.9	150.9	150.0	148.9	148.0	147.7
80°	123.3	122.6	122.0	121.3	120.6	120.1	119.6	119.2	118.8	118.3	117.8
82.5°	92.8	92.6	92.2	91.9	91.6	91.4	91.3	91.2	91.1	91.0	90.8
85°	54.1	54.1	54.1	54.1	54.1	53.9	53.4	53.1	52.6	52.1	52.1
87.5°	21.1	21.1	21.2	21.2	21.2	21.2	21.2	21.2	21.1	21.1	21.2
90°	1.3	2.4	3.4	4.4	5.5	6.3	7.2	7.9	8.7	9.4	10.0
92.5°	9.1	10.4	11.5	12.7	13.9	14.8	15.4	15.8	16.4	16.9	17.2
95°	25.6	26.5	27.3	28.2	29.0	29.8	30.4	31.1	31.8	32.4	32.7
97.5°	44.8	45.4	46.1	46.8	47.5	48.3	49.0	49.8	50.5	51.4	51.7
100°	59.8	60.1	60.5	60.9	61.4	61.9	62.8	63.6	64.5	65.3	65.5
102.5°	75.5	75.7	75.8	76.0	76.2	76.6	77.4	78.1	78.9	79.7	79.9
105°	99.5	99.6	99.7	99.8	99.9	100.1	100.5	100.9	101.2	101.6	101.9
107.5°	124.7	124.8	125.0	125.1	125.2	125.3	125.4	125.4	125.5	125.5	125.7
110°	141.8	141.9	142.1	142.3	142.5	142.6	142.5	142.4	142.3	142.2	142.0



TEST NUMBER: P332780-830

CATALOG NUMBER: S124DIW-S795D470U830-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	159.6	159.6	159.7	159.7	159.8	159.7	159.5	159.3	159.1	159.0	158.9
115°	186.2	186.2	186.2	186.2	186.2	186.2	186.0	185.8	185.6	185.4	185.3
117.5°	211.3	211.4	211.5	211.6	211.6	211.6	211.5	211.3	211.2	211.0	210.8
120°	228.1	228.5	228.8	229.2	229.6	229.6	229.3	229.0	228.8	228.5	228.0
122.5°	245.5	245.6	245.8	245.9	246.1	246.1	246.0	245.8	245.7	245.6	245.2
125°	271.2	271.2	271.2	271.2	271.2	271.2	271.1	271.0	270.9	270.8	270.6
127.5°	294.5	294.8	295.1	295.4	295.7	295.8	295.6	295.4	295.3	295.1	294.9
130°	310.9	311.2	311.5	311.8	312.1	312.2	312.2	312.2	312.2	312.2	312.0
132.5°	327.6	327.9	328.1	328.3	328.5	328.6	328.5	328.4	328.4	328.3	328.1
135°	349.8	350.3	350.9	351.5	352.0	352.3	352.3	352.3	352.3	352.3	352.1
137.5°	373.9	374.2	374.4	374.7	374.9	375.1	375.3	375.5	375.6	375.8	375.5
140°	389.9	390.1	390.3	390.5	390.7	390.8	390.8	390.8	390.8	390.8	390.7
142.5°	404.6	404.8	405.0	405.2	405.4	405.5	405.4	405.3	405.2	405.1	405.1
145°	425.0	425.4	425.7	426.1	426.5	426.7	426.8	426.9	427.0	427.1	427.0
147.5°	445.2	445.5	446.0	446.5	447.0	447.1	447.0	447.0	447.0	446.9	446.8
150°	457.4	457.8	458.2	458.5	458.9	459.1	459.1	459.1	459.1	459.1	459.1
152.5°	469.0	469.3	469.5	469.8	470.0	470.1	470.1	470.2	470.3	470.4	470.6
155°	486.9	486.9	486.9	486.9	486.9	486.8	486.7	486.6	486.5	486.4	486.8
157.5°	501.9	501.7	501.6	501.4	501.2	501.1	501.1	501.1	501.1	501.1	501.3
160°	510.9	510.8	510.7	510.6	510.5	510.4	510.3	510.2	510.1	510.0	510.3
162.5°	519.1	518.8	518.5	518.3	518.0	517.8	517.7	517.6	517.6	517.5	518.0
165°	530.0	529.7	529.4	529.1	528.9	528.7	528.5	528.3	528.1	527.9	528.5
167.5°	538.5	538.1	537.7	537.3	536.9	536.7	536.7	536.8	536.8	536.8	537.3
170°	543.3	542.8	542.3	541.9	541.4	541.2	541.3	541.4	541.5	541.6	542.2
172.5°	546.7	546.3	545.9	545.5	545.1	544.9	544.9	545.0	545.0	545.0	545.6
175°	551.4	550.9	550.4	550.0	549.5	549.2	549.1	549.0	548.9	548.8	549.5
177.5°	552.9	552.5	552.1	551.8	551.4	551.2	551.2	551.2	551.2	551.2	551.8
180°	552.2	552.2	552.2	552.2	552.2	552.2	552.2	552.2	552.2	552.2	552.2



TEST NUMBER: P332780-830

CATALOG NUMBER: S124DIW-S795D470U830-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1251.2	1251.2	1251.2	1251.2	1251.2	1251.2	1251.2	1251.2
2.5°	1246.7	1248.5	1250.3	1251.1	1250.9	1250.8	1250.6	1250.4
5°	1240.0	1242.5	1244.9	1245.9	1245.5	1245.1	1244.6	1244.2
7.5°	1226.2	1228.2	1230.1	1231.0	1230.8	1230.5	1230.2	1229.9
10°	1214.7	1216.4	1218.2	1218.9	1218.4	1218.0	1217.6	1217.1
12.5°	1200.6	1202.5	1204.5	1205.1	1204.6	1203.9	1203.2	1202.7
15°	1173.7	1175.0	1176.3	1176.7	1176.0	1175.4	1174.7	1174.0
17.5°	1143.0	1143.9	1144.7	1144.9	1144.4	1144.0	1143.6	1143.1
20°	1120.2	1120.9	1121.5	1121.6	1121.2	1120.8	1120.3	1119.8
22.5°	1096.4	1097.6	1098.8	1099.0	1098.2	1097.4	1096.6	1095.8
25°	1057.2	1057.3	1057.6	1057.2	1056.4	1055.5	1054.6	1053.7
27.5°	1013.1	1012.6	1012.0	1011.3	1010.1	1009.0	1007.9	1006.7
30°	982.7	981.8	980.9	980.0	978.8	977.7	976.6	975.5
32.5°	951.9	950.8	949.8	948.7	947.5	946.4	945.3	944.2
35°	903.2	901.6	900.0	898.7	897.6	896.5	895.4	894.3
37.5°	852.2	850.5	848.9	847.3	845.7	844.3	842.8	841.3
40°	816.6	814.5	812.2	810.5	809.4	808.3	807.2	806.1
42.5°	782.2	779.7	777.0	775.4	774.7	773.9	773.2	772.4
45°	729.0	726.5	724.1	722.6	721.8	721.1	720.5	719.8
47.5°	677.4	674.7	671.8	669.7	668.0	666.3	664.6	662.9
50°	641.4	638.3	635.2	632.9	631.6	630.3	629.0	627.6
52.5°	604.5	601.6	598.9	596.7	595.0	593.3	591.6	589.9
55°	550.1	547.4	544.7	542.7	541.4	540.1	538.7	537.3
57.5°	495.6	493.0	490.5	488.6	487.3	486.0	484.7	483.4
60°	458.2	456.2	454.1	452.6	451.5	450.3	449.2	448.2
62.5°	421.6	419.8	418.0	416.5	415.4	414.2	413.2	412.1
65°	368.5	366.3	364.0	362.4	361.3	360.1	359.0	357.9
67.5°	313.8	311.6	309.4	308.2	307.9	307.6	307.3	307.0
70°	279.2	277.4	275.6	274.4	273.7	273.1	272.4	271.7
72.5°	244.6	243.2	241.8	240.7	240.0	239.3	238.7	238.0
75°	194.7	193.8	192.9	192.4	192.2	191.9	191.7	191.5
77.5°	147.4	147.1	146.9	146.5	145.9	145.3	144.8	144.2
80°	117.4	117.0	116.5	116.2	115.9	115.7	115.6	115.3
82.5°	90.5	90.2	89.9	89.7	89.5	89.3	89.1	88.8
85°	52.1	52.1	52.1	52.0	51.8	51.6	51.4	51.1
87.5°	21.4	21.5	21.6	21.7	21.7	21.8	21.8	21.8
90°	10.6	11.1	11.7	12.1	12.3	12.4	12.6	12.8
92.5°	17.6	17.9	18.3	18.5	18.7	18.8	18.9	18.9
95°	33.0	33.3	33.6	33.7	33.7	33.7	33.7	33.7
97.5°	52.0	52.4	52.7	52.9	52.9	52.9	52.9	52.9
100°	65.7	65.9	66.1	66.2	66.2	66.2	66.2	66.2
102.5°	80.2	80.5	80.8	81.0	81.0	81.1	81.2	81.2
105°	102.3	102.5	102.8	103.1	103.4	103.7	104.0	104.2
107.5°	126.0	126.3	126.6	126.7	126.7	126.7	126.6	126.6
110°	141.9	141.7	141.5	141.5	141.8	142.0	142.3	142.6





TEST NUMBER: P332780-830

CATALOG NUMBER: S124DIW-S795D470U830-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	158.9	158.8	158.8	158.8	158.9	158.9	159.0	159.0
115°	185.2	185.1	185.0	184.9	184.8	184.7	184.6	184.5
117.5°	210.5	210.1	209.8	209.5	209.3	209.2	209.0	208.8
120°	227.5	227.1	226.6	226.5	226.7	226.9	227.1	227.2
122.5°	245.0	244.6	244.3	243.9	243.6	243.3	242.9	242.6
125°	270.4	270.2	270.0	269.8	269.7	269.5	269.3	269.1
127.5°	294.7	294.5	294.4	294.2	294.1	293.9	293.8	293.6
130°	311.8	311.6	311.4	311.1	310.8	310.4	310.0	309.6
132.5°	327.9	327.7	327.5	327.3	327.2	327.1	326.9	326.8
135°	351.9	351.8	351.6	351.4	351.1	350.8	350.5	350.2
137.5°	375.2	375.0	374.8	374.7	374.8	374.8	374.8	374.9
140°	390.6	390.5	390.4	390.3	390.2	390.1	390.0	389.9
142.5°	405.1	405.1	405.1	405.0	405.0	405.0	405.0	405.0
145°	426.9	426.8	426.7	426.5	426.2	425.9	425.7	425.4
147.5°	446.7	446.6	446.6	446.5	446.4	446.3	446.2	446.1
150°	459.1	459.1	459.1	459.1	459.0	458.9	458.8	458.7
152.5°	470.9	471.1	471.4	471.3	471.1	470.8	470.6	470.3
155°	487.2	487.6	488.0	488.0	487.6	487.2	486.8	486.4
157.5°	501.6	501.9	502.2	502.2	501.9	501.5	501.2	500.9
160°	510.6	510.9	511.1	511.0	510.6	510.1	509.5	509.1
162.5°	518.5	519.1	519.5	519.5	519.1	518.6	518.1	517.6
165°	529.0	529.6	530.2	530.3	529.9	529.5	529.1	528.8
167.5°	537.9	538.5	539.0	539.0	538.5	537.9	537.2	536.7
170°	542.7	543.3	543.8	543.8	543.1	542.4	541.8	541.1
172.5°	546.3	547.0	547.5	547.5	546.9	546.2	545.5	544.9
175°	550.2	550.8	551.5	551.5	550.8	550.2	549.5	548.8
177.5°	552.3	552.8	553.4	553.3	552.7	552.1	551.5	550.9
180°	552.2	552.2	552.2	552.2	552.2	552.2	552.2	552.2

(END OF REPORT)