

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: P331509-840

Luminaire Tested: **S122DIW-S485D970U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331509-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIW-S485D970U840-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 485 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 970 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5896.8 lumens  
Efficiency: N/A  
Efficacy: 130.5 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

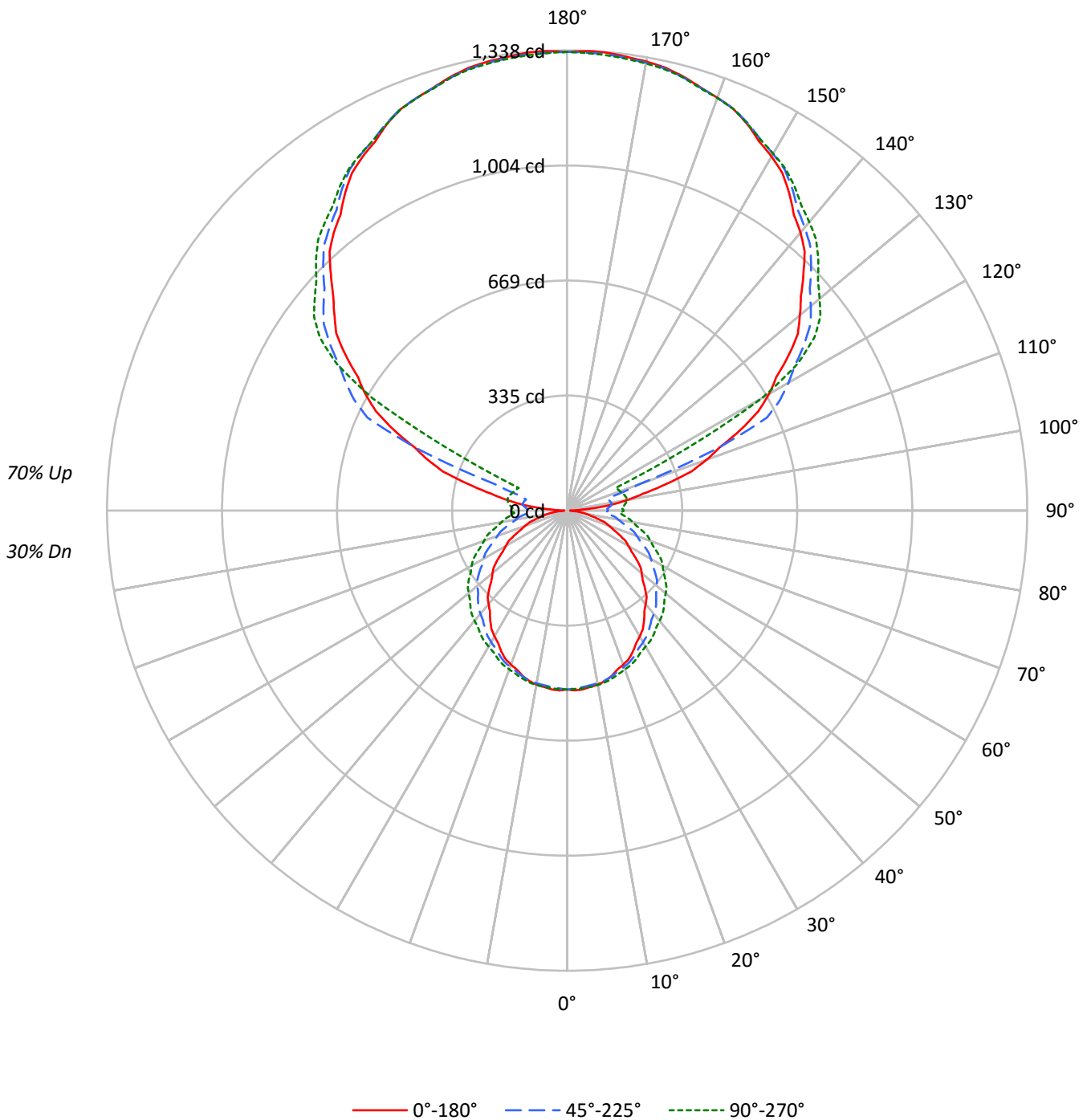
Input Watts (W): 45.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	54	54	54	38	38	38	30
1	92	88	84	80	83	79	75	72	62	59	57	46	45	43	32	31	30	23
2	84	76	70	65	75	68	63	58	54	50	47	40	38	35	27	26	25	19
3	76	67	59	53	68	60	53	48	47	42	39	35	32	29	24	22	20	16
4	69	59	51	45	62	53	46	41	41	37	33	31	28	25	21	19	17	13
5	64	52	44	38	57	47	40	34	37	32	28	28	24	21	19	17	15	11
6	58	46	38	33	52	42	35	30	33	28	24	25	21	18	17	15	13	10
7	54	42	34	28	48	38	31	26	30	25	21	22	19	16	16	13	11	9
8	50	38	30	25	44	34	27	23	27	22	18	20	17	14	14	12	10	8
9	46	34	27	22	41	31	24	20	25	20	16	19	15	13	13	11	9	7
10	43	31	24	19	39	28	22	18	23	18	15	17	14	11	12	10	8	6

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

	0°	45°	90°
0°	8402	8402	8402
5°	8443	8088	8058
10°	8390	7850	7761
15°	8275	7596	7448
20°	8129	7324	7148
25°	7984	7062	6875
30°	7780	6794	6601
35°	7575	6536	6409
40°	7360	6315	6215
45°	7153	6118	6051
50°	6934	5937	5888
55°	6700	5744	5722
60°	6417	5546	5546
65°	6122	5313	5339
70°	5796	5061	5115
75°	5371	4816	4908
80°	4707	4564	4698
85°	4070	4346	4535



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	49.3	0.8
10°-20°	141.4	2.4
20°-30°	214.3	3.6
30°-40°	261.0	4.4
40°-50°	280.8	4.8
50°-60°	272.7	4.6
60°-70°	238.1	4.0
70°-80°	183.3	3.1
80°-90°	126.3	2.1
90°-100°	129.2	2.2
100°-110°	225.0	3.8
110°-120°	476.9	8.1
120°-130°	742.6	12.6
130°-140°	775.1	13.1
140°-150°	713.2	12.1
150°-160°	572.1	9.7
160°-170°	368.6	6.3
170°-180°	126.9	2.2
0°-30°	405.0	6.9
0°-40°	666.0	11.3
0°-60°	1219.4	20.7
0°-90°	1767.1	30.0
90°-120°	831.2	14.1
90°-150°	3062.1	51.9
90°-180°	4130.0	70.0
0°-180°	5896.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	520	520	520	520	520	
5°	522	520	515	519	519	49
15°	498	499	499	506	505	140
25°	452	458	464	473	476	208
35°	390	403	417	433	439	244
45°	320	340	367	389	398	247
55°	245	273	311	338	348	219
65°	167	205	249	279	290	166
75°	93	135	183	214	226	98
85°	27	74	122	153	164	29
90°	8	63	119	153	165	8
95°	69	75	124	156	166	82
105°	297	333	124	159	173	318
115°	558	584	641	237	155	549
125°	786	800	841	867	878	701
135°	972	987	1003	1028	1033	750
145°	1126	1126	1142	1152	1152	704
155°	1240	1232	1243	1248	1241	571
165°	1307	1301	1304	1310	1304	369
175°	1336	1330	1332	1338	1329	127
180°	1334	1334	1334	1334	1334	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	520.4	520.4	520.4	520.4	520.4	520.4	520.4	520.4	520.4	520.4	520.4
2.5°	523.4	523.0	522.6	522.2	521.8	521.1	520.2	519.3	518.4	517.4	518.1
5°	521.9	521.4	520.9	520.4	519.9	519.2	518.2	517.2	516.1	515.1	516.1
7.5°	517.3	516.8	516.5	516.2	515.9	515.3	514.5	513.8	513.0	512.2	513.4
10°	513.6	513.3	512.9	512.6	512.3	511.9	511.4	510.9	510.4	509.9	511.2
12.5°	507.6	507.7	507.8	507.8	507.9	507.7	507.4	507.0	506.5	506.2	507.6
15°	497.8	498.1	498.5	498.8	499.1	499.3	499.3	499.3	499.3	499.3	500.8
17.5°	485.1	485.8	486.6	487.3	488.0	488.6	489.1	489.6	490.2	490.7	492.2
20°	476.7	477.5	478.4	479.2	480.0	480.8	481.4	482.1	482.8	483.4	485.2
22.5°	467.6	468.6	469.6	470.5	471.5	472.4	473.4	474.3	475.2	476.3	478.1
25°	452.5	453.7	454.8	456.1	457.2	458.6	460.1	461.6	463.1	464.5	466.6
27.5°	434.4	436.4	438.3	440.2	442.0	443.9	445.7	447.5	449.2	451.0	453.5
30°	422.3	424.5	426.7	428.9	431.1	433.2	435.5	437.6	439.8	441.9	444.6
32.5°	409.1	411.5	413.9	416.5	418.9	421.4	423.9	426.6	429.1	431.7	434.7
35°	389.9	392.7	395.7	398.5	401.3	404.3	407.5	410.7	413.8	417.1	420.7
37.5°	369.1	372.4	375.7	379.0	382.2	386.0	390.1	394.2	398.3	402.4	406.6
40°	355.3	358.9	362.6	366.3	370.0	374.1	378.6	383.1	387.7	392.2	396.6
42.5°	341.9	345.7	349.3	353.0	356.7	361.1	366.4	371.5	376.8	381.9	386.7
45°	319.8	324.3	328.8	333.4	337.9	343.1	348.9	354.8	360.7	366.6	371.7
47.5°	297.9	302.9	307.8	312.7	317.6	323.6	330.4	337.3	344.2	351.0	356.5
50°	282.9	288.0	293.3	298.4	303.6	309.9	317.5	325.1	332.6	340.1	345.9
52.5°	268.3	273.8	279.2	284.8	290.2	296.9	304.9	312.8	320.7	328.7	334.5
55°	245.1	251.2	257.2	263.2	269.2	276.6	285.4	294.1	302.8	311.4	317.5
57.5°	222.2	229.0	235.8	242.6	249.4	257.2	266.1	275.0	283.9	292.8	299.3
60°	205.9	213.1	220.4	227.5	234.7	243.1	252.7	262.2	271.8	281.3	287.7
62.5°	191.4	198.8	206.4	213.9	221.4	229.8	239.3	248.9	258.5	268.0	274.8
65°	167.4	175.6	183.9	192.1	200.3	209.3	219.2	229.1	239.0	248.9	255.8
67.5°	145.4	154.0	162.6	171.2	179.8	189.0	199.2	209.3	219.4	229.5	236.5
70°	129.8	138.5	147.1	155.8	164.6	174.1	184.5	194.9	205.3	215.7	222.9
72.5°	115.2	124.2	133.2	142.2	151.2	161.0	171.5	182.0	192.5	203.0	210.2
75°	92.8	102.2	111.5	120.9	130.3	140.4	151.1	161.8	172.6	183.3	190.5
77.5°	71.1	80.9	90.7	100.5	110.4	120.7	131.6	142.5	153.4	164.3	171.5
80°	56.6	66.8	77.1	87.3	97.5	108.1	119.0	129.8	140.7	151.6	158.6
82.5°	44.5	54.6	64.6	74.7	84.8	95.4	106.4	117.4	128.5	139.6	146.5
85°	27.2	37.6	48.0	58.4	68.7	79.3	90.0	100.7	111.5	122.2	129.3
87.5°	14.9	25.4	35.9	46.4	56.9	67.6	78.7	89.7	100.8	111.9	119.0
90°	8.5	20.6	32.6	44.7	56.9	69.1	81.5	94.0	106.4	118.9	126.6
92.5°	26.5	35.2	44.1	52.9	61.8	71.8	83.0	94.1	105.3	116.5	123.6
95°	68.8	69.6	70.4	71.2	72.0	78.2	89.7	101.3	112.8	124.4	131.8
97.5°	129.8	116.8	103.9	91.0	78.0	78.1	91.2	104.3	117.4	130.6	137.6
100°	176.1	152.9	129.8	106.5	83.4	78.3	91.3	104.3	117.3	130.4	138.4
102.5°	226.4	225.9	225.3	224.8	224.2	213.3	191.9	170.5	149.2	127.7	136.0
105°	297.1	308.4	319.7	331.0	342.2	323.1	273.2	223.4	173.6	123.7	132.0
107.5°	378.6	387.7	396.8	405.9	415.0	388.5	326.7	264.8	203.0	141.1	144.3
110°	430.5	438.4	446.2	454.0	461.9	439.0	385.2	331.4	277.7	223.9	207.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	479.9	486.7	493.5	500.3	507.2	506.8	499.3	491.8	484.2	476.8	403.9
115°	557.8	563.4	568.9	574.3	579.9	589.1	601.9	614.8	627.7	640.7	546.3
117.5°	626.8	632.1	637.3	642.6	647.9	655.9	666.5	677.2	687.8	698.5	679.4
120°	677.7	681.7	685.5	689.4	693.3	700.5	711.0	721.6	732.2	742.8	750.0
122.5°	720.9	724.6	728.3	732.0	735.6	742.7	753.2	763.7	774.2	784.7	790.8
125°	786.0	788.8	791.6	794.4	797.2	803.2	812.7	822.1	831.6	841.0	847.1
127.5°	845.7	848.6	851.5	854.4	857.4	862.5	869.9	877.2	884.5	891.9	898.3
130°	883.4	886.8	890.0	893.2	896.6	901.1	907.0	912.8	918.8	924.6	931.0
132.5°	922.1	924.8	927.6	930.3	933.1	937.0	942.1	947.2	952.2	957.3	963.2
135°	971.5	974.9	978.4	981.8	985.2	988.8	992.4	995.9	999.6	1003.2	1008.9
137.5°	1022.3	1024.6	1027.0	1029.4	1031.8	1034.4	1037.3	1040.3	1043.2	1046.1	1051.3
140°	1055.4	1057.0	1058.5	1060.1	1061.7	1063.8	1066.4	1069.1	1071.9	1074.5	1079.1
142.5°	1083.3	1084.6	1086.0	1087.4	1088.7	1090.9	1093.6	1096.4	1099.1	1101.9	1105.8
145°	1126.1	1125.9	1125.7	1125.5	1125.3	1127.0	1130.6	1134.3	1137.9	1141.6	1144.1
147.5°	1164.2	1163.3	1162.5	1161.6	1160.8	1162.3	1165.9	1169.4	1173.1	1176.7	1177.9
150°	1188.8	1187.3	1185.8	1184.4	1182.9	1183.8	1187.2	1190.6	1194.1	1197.5	1198.8
152.5°	1209.7	1208.0	1206.3	1204.7	1203.0	1203.8	1207.0	1210.3	1213.6	1216.8	1218.1
155°	1240.0	1238.0	1236.1	1234.2	1232.2	1232.5	1235.2	1237.7	1240.3	1242.8	1244.2
157.5°	1263.7	1262.1	1260.4	1258.8	1257.2	1257.3	1259.1	1260.9	1262.6	1264.5	1266.0
160°	1277.6	1276.4	1275.1	1273.7	1272.4	1272.4	1273.7	1275.1	1276.4	1277.6	1278.9
162.5°	1290.0	1288.7	1287.4	1286.1	1284.9	1284.8	1285.9	1287.0	1288.1	1289.2	1290.6
165°	1306.6	1305.3	1303.9	1302.7	1301.4	1301.1	1301.7	1302.3	1303.0	1303.6	1305.1
167.5°	1318.9	1317.6	1316.4	1315.0	1313.7	1313.4	1314.0	1314.6	1315.2	1315.9	1317.3
170°	1325.9	1324.5	1323.3	1322.0	1320.7	1320.3	1320.7	1321.1	1321.6	1322.0	1323.5
172.5°	1330.5	1329.2	1327.9	1326.7	1325.3	1324.9	1325.3	1325.8	1326.2	1326.7	1328.2
175°	1336.5	1334.9	1333.4	1332.0	1330.5	1329.9	1330.4	1330.8	1331.2	1331.6	1333.1
177.5°	1337.5	1336.3	1335.0	1333.8	1332.6	1332.1	1332.3	1332.4	1332.6	1332.8	1334.0
180°	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	520.4	520.4	520.4	520.4	520.4	520.4	520.4	520.4
2.5°	518.8	519.4	520.1	520.3	520.0	519.8	519.5	519.2
5°	517.2	518.2	519.2	519.6	519.4	519.3	519.1	518.9
7.5°	514.6	515.8	517.1	517.6	517.5	517.3	517.1	516.9
10°	512.5	513.8	515.2	515.8	515.6	515.4	515.3	515.1
12.5°	508.9	510.3	511.6	512.2	512.0	511.8	511.7	511.5
15°	502.3	503.8	505.3	505.9	505.8	505.6	505.4	505.3
17.5°	493.8	495.4	497.0	497.8	497.8	497.8	497.8	497.8
20°	487.2	489.0	490.8	491.7	491.7	491.7	491.7	491.7
22.5°	479.9	481.7	483.6	484.6	484.9	485.1	485.4	485.7
25°	468.6	470.6	472.6	473.9	474.4	474.9	475.4	475.9
27.5°	456.2	458.7	461.2	462.6	463.0	463.4	463.7	464.1
30°	447.4	450.0	452.7	454.2	454.7	455.2	455.8	456.3
32.5°	437.9	440.9	444.0	446.1	447.0	447.9	448.8	449.7
35°	424.4	428.2	431.8	434.2	435.5	436.6	437.8	439.0
37.5°	410.6	414.8	418.8	421.4	422.7	423.9	425.2	426.5
40°	400.9	405.3	409.6	412.5	414.0	415.6	417.1	418.6
42.5°	391.4	396.2	400.9	404.1	405.6	407.1	408.6	410.1
45°	377.0	382.1	387.3	390.7	392.4	394.2	395.8	397.5
47.5°	361.8	367.3	372.7	376.4	378.2	380.0	381.9	383.7
50°	351.5	357.2	362.9	366.7	368.6	370.4	372.2	374.1
52.5°	340.3	346.2	352.0	355.9	357.9	359.9	361.8	363.9
55°	323.6	329.6	335.6	339.7	341.9	344.1	346.3	348.4
57.5°	305.8	312.3	318.8	323.2	325.4	327.6	329.8	332.0
60°	294.1	300.4	306.8	311.1	313.5	315.9	318.2	320.5
62.5°	281.6	288.3	295.1	299.6	301.8	304.1	306.3	308.5
65°	262.7	269.5	276.4	280.9	283.1	285.3	287.4	289.6
67.5°	243.5	250.3	257.3	262.0	264.2	266.5	268.8	271.0
70°	230.1	237.3	244.5	249.1	251.2	253.2	255.2	257.2
72.5°	217.2	224.3	231.4	236.1	238.4	240.9	243.3	245.7
75°	197.7	204.9	212.1	216.8	218.9	221.2	223.3	225.5
77.5°	178.6	185.8	193.0	197.7	200.1	202.4	204.8	207.1
80°	165.7	172.7	179.8	184.4	186.8	189.1	191.5	193.8
82.5°	153.6	160.7	167.6	172.3	174.5	176.7	178.9	181.2
85°	136.2	143.3	150.4	155.0	157.3	159.8	162.1	164.4
87.5°	125.9	133.0	140.1	144.7	146.9	149.2	151.4	153.6
90°	134.4	142.2	150.0	155.1	157.5	160.0	162.4	164.8
92.5°	130.8	137.8	145.0	149.8	152.0	154.2	156.5	158.8
95°	139.3	146.7	154.1	158.8	160.6	162.4	164.1	165.9
97.5°	144.7	151.8	158.9	163.5	165.7	167.9	170.2	172.5
100°	146.2	154.2	162.1	167.2	169.5	171.8	174.0	176.3
102.5°	144.3	152.6	161.0	166.3	168.7	171.2	173.6	176.1
105°	140.2	148.3	156.6	162.1	164.8	167.5	170.2	172.9
107.5°	147.5	150.8	154.0	156.9	159.7	162.4	165.1	167.7
110°	191.8	175.7	159.6	152.9	155.6	158.3	161.0	163.7





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CATALOG NUMBER: S122DIW-S485D970U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	331.0	258.2	185.3	150.2	152.7	155.2	157.7	160.3
115°	452.1	357.9	263.6	209.6	196.1	182.5	168.8	155.3
117.5°	660.5	641.4	622.3	588.2	539.3	490.2	441.2	392.1
120°	757.3	764.6	771.8	761.9	734.8	707.7	680.5	653.5
122.5°	796.9	803.0	809.1	810.1	806.1	802.0	798.0	794.0
125°	853.1	859.1	865.2	869.2	871.4	873.5	875.7	877.9
127.5°	904.6	911.0	917.4	921.3	922.9	924.5	926.1	927.8
130°	937.4	943.7	950.2	953.9	955.0	956.1	957.3	958.4
132.5°	969.1	975.0	980.9	984.4	985.5	986.6	987.7	989.0
135°	1014.5	1020.2	1025.8	1029.2	1030.1	1031.0	1031.9	1032.8
137.5°	1056.4	1061.7	1066.8	1069.6	1070.1	1070.5	1070.9	1071.3
140°	1083.8	1088.3	1093.0	1095.3	1095.2	1095.1	1095.1	1095.0
142.5°	1109.7	1113.6	1117.5	1119.3	1119.1	1118.9	1118.7	1118.5
145°	1146.6	1149.0	1151.5	1152.7	1152.5	1152.3	1152.1	1151.8
147.5°	1179.1	1180.4	1181.6	1182.0	1181.5	1181.0	1180.5	1180.0
150°	1200.1	1201.3	1202.6	1202.7	1201.7	1200.6	1199.5	1198.5
152.5°	1219.4	1220.6	1221.9	1221.9	1220.5	1219.1	1217.7	1216.3
155°	1245.5	1246.7	1248.0	1247.8	1246.1	1244.4	1242.6	1240.9
157.5°	1267.4	1268.9	1270.3	1270.2	1268.5	1266.9	1265.2	1263.5
160°	1280.2	1281.4	1282.7	1282.6	1281.1	1279.6	1278.2	1276.7
162.5°	1292.1	1293.5	1295.1	1294.8	1292.9	1291.1	1289.3	1287.5
165°	1306.7	1308.2	1309.7	1309.7	1308.2	1306.7	1305.1	1303.6
167.5°	1318.8	1320.3	1321.8	1321.6	1319.7	1317.8	1315.9	1313.9
170°	1325.0	1326.5	1328.0	1327.8	1325.9	1323.9	1322.0	1320.1
172.5°	1329.6	1331.1	1332.6	1332.4	1330.5	1328.6	1326.7	1324.7
175°	1334.6	1336.2	1337.7	1337.4	1335.1	1333.0	1330.9	1328.8
177.5°	1335.2	1336.4	1337.6	1337.5	1335.8	1334.3	1332.8	1331.3
180°	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5

(END OF REPORT)