

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: P331494-930

Luminaire Tested: **S122DIW-S290D1440U930-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331494-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIW-S290D1440U930-4F0-1E-UDD-F1  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1440 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5058.4 lumens  
Efficiency: N/A  
Efficacy: 94.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

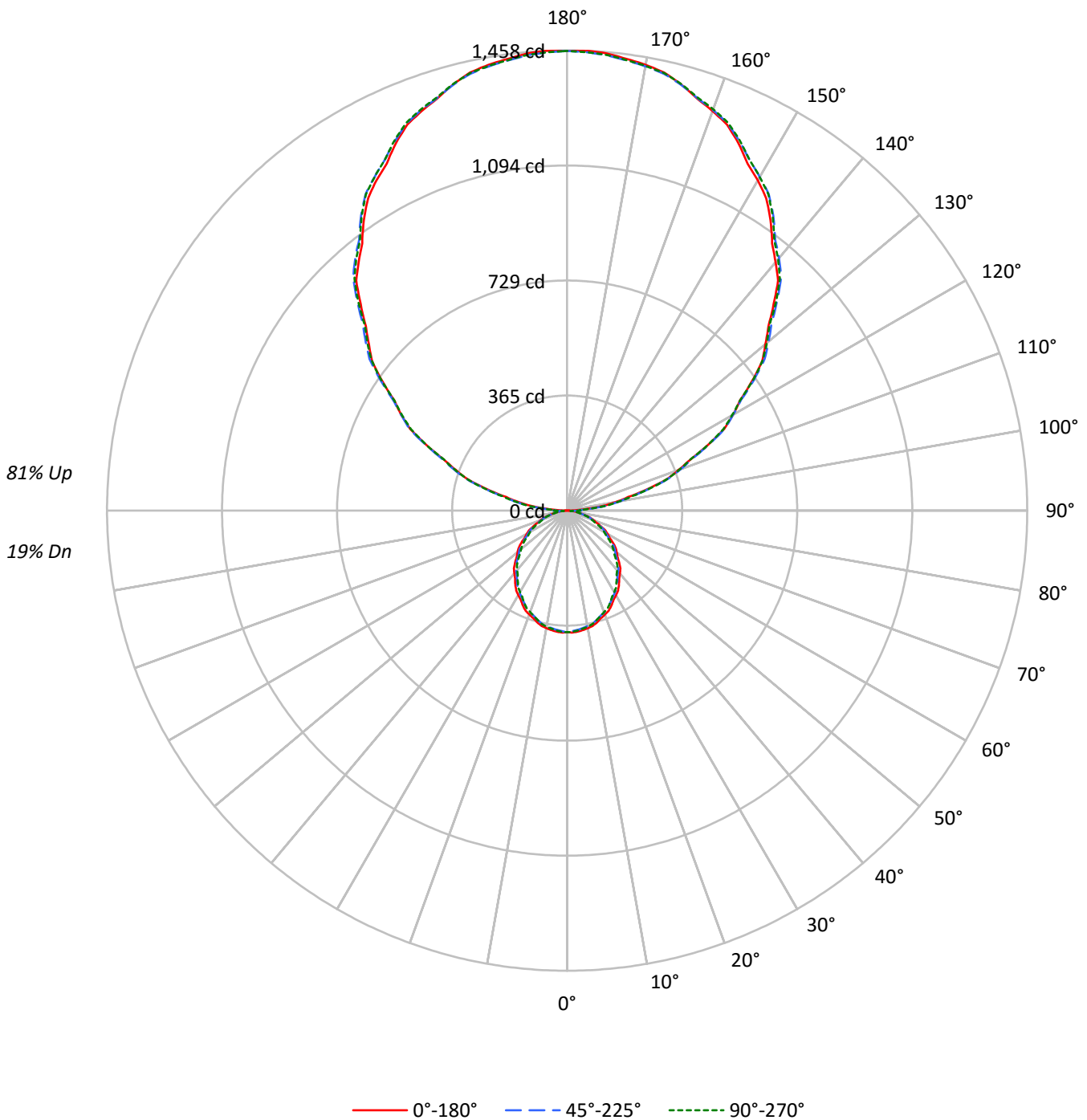
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	100	100	100	100	88	88	88	88	66	66	66	46	46	46	28	28	28	19				
1	91	87	83	80	80	77	74	71	58	56	54	41	39	38	25	24	24	16				
2	83	76	70	65	73	67	62	58	51	47	45	36	34	32	22	21	20	14				
3	75	66	60	54	66	59	53	48	45	41	38	31	29	27	19	18	17	12				
4	69	59	51	45	61	52	46	41	40	35	32	28	25	23	17	16	14	10				
5	63	52	44	39	55	46	40	35	35	31	27	25	22	20	15	14	13	9				
6	58	46	39	33	51	41	35	30	32	27	24	22	20	17	14	12	11	8				
7	53	42	34	29	47	37	31	26	28	24	21	20	17	15	13	11	10	7				
8	49	38	30	25	43	34	27	23	26	21	18	19	16	13	12	10	9	6				
9	46	34	27	22	40	31	24	20	24	19	16	17	14	12	11	9	8	5				
10	43	31	24	20	38	28	22	18	22	17	14	16	13	11	10	8	7	5				

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

	0°	45°	90°
0°	6218	6218	6218
5°	6242	6152	6190
10°	6205	6091	6120
15°	6128	6011	6006
20°	6019	5893	5887
25°	5911	5747	5747
30°	5774	5614	5565
35°	5643	5452	5373
40°	5480	5292	5191
45°	5318	5133	5005
50°	5144	4968	4793
55°	4963	4777	4597
60°	4760	4543	4379
65°	4542	4317	4118
70°	4263	4036	3843
75°	3880	3718	3624
80°	3440	3347	3171
85°	2816	2668	2408



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	36.2	0.7
10°-20°	101.9	2.0
20°-30°	149.8	3.0
30°-40°	174.0	3.4
40°-50°	173.8	3.4
50°-60°	151.6	3.0
60°-70°	112.1	2.2
70°-80°	63.5	1.3
80°-90°	22.9	0.5
90°-100°	92.3	1.8
100°-110°	286.6	5.7
110°-120°	490.0	9.7
120°-130°	644.3	12.7
130°-140°	723.2	14.3
140°-150°	709.1	14.0
150°-160°	594.8	11.8
160°-170°	394.5	7.8
170°-180°	137.9	2.7
0°-30°	287.9	5.7
0°-40°	461.9	9.1
0°-60°	787.3	15.6
0°-90°	985.8	19.5
90°-120°	868.9	17.2
90°-150°	2945.5	58.2
90°-180°	4073.0	80.5
0°-180°	5058.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	385	385	385	385	385	
5°	385	384	380	382	382	37
15°	367	364	360	361	359	103
25°	332	329	323	323	323	153
35°	286	282	277	274	273	179
45°	233	230	225	221	219	180
55°	176	174	170	165	163	158
65°	119	117	113	110	108	118
75°	62	61	60	58	58	66
85°	15	15	14	13	13	17
90°	1	17	43	41	42	4
95°	64	76	79	79	76	73
105°	264	268	270	273	273	279
115°	492	498	497	495	492	486
125°	715	726	723	719	718	639
135°	926	938	942	940	937	715
145°	1123	1132	1139	1140	1136	702
155°	1284	1288	1292	1297	1294	591
165°	1398	1396	1396	1404	1399	394
175°	1454	1450	1448	1456	1449	138
180°	1456	1456	1456	1456	1456	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1
2.5°	386.9	386.6	386.3	386.0	385.6	385.1	384.4	383.7	382.9	382.2	382.9
5°	385.1	384.8	384.5	384.2	383.8	383.3	382.4	381.5	380.5	379.6	380.3
7.5°	381.8	381.2	380.7	380.3	379.8	379.0	378.1	377.2	376.3	375.4	376.0
10°	378.5	378.0	377.4	376.8	376.2	375.4	374.5	373.5	372.5	371.5	372.1
12.5°	374.1	373.6	373.1	372.5	372.0	371.3	370.3	369.3	368.4	367.4	367.8
15°	366.6	366.2	365.7	365.2	364.7	363.9	362.8	361.7	360.7	359.6	360.0
17.5°	357.2	356.7	356.2	355.7	355.2	354.4	353.4	352.2	351.1	350.1	350.4
20°	350.3	349.8	349.4	348.9	348.4	347.6	346.4	345.3	344.1	343.0	343.2
22.5°	343.6	342.8	342.2	341.4	340.8	339.9	338.8	337.7	336.6	335.6	335.6
25°	331.8	331.2	330.5	329.9	329.2	328.2	326.8	325.4	324.0	322.6	322.8
27.5°	318.5	318.0	317.3	316.7	316.2	315.3	314.2	313.1	312.0	310.9	310.6
30°	309.7	309.0	308.3	307.7	307.0	306.1	304.8	303.6	302.3	301.1	300.8
32.5°	300.1	299.6	299.1	298.6	298.1	297.1	295.8	294.6	293.3	292.0	291.5
35°	286.3	285.4	284.6	283.8	283.0	281.9	280.6	279.3	278.0	276.6	276.1
37.5°	270.7	269.9	269.2	268.5	267.7	266.8	265.5	264.2	262.8	261.5	260.9
40°	260.0	259.3	258.7	258.0	257.4	256.4	255.0	253.7	252.4	251.1	250.4
42.5°	249.6	249.0	248.3	247.7	247.0	246.0	244.7	243.4	242.1	240.8	239.9
45°	232.9	232.4	231.8	231.2	230.6	229.8	228.5	227.3	226.1	224.8	223.9
47.5°	216.4	215.8	215.3	214.7	214.2	213.3	212.0	210.8	209.5	208.1	207.2
50°	204.8	204.4	204.0	203.6	203.2	202.4	201.2	200.1	198.9	197.8	196.7
52.5°	193.6	193.0	192.5	191.9	191.4	190.5	189.5	188.4	187.3	186.2	185.2
55°	176.3	175.8	175.3	174.8	174.3	173.6	172.6	171.6	170.6	169.7	168.6
57.5°	159.0	158.6	158.2	157.8	157.4	156.6	155.6	154.5	153.4	152.3	151.3
60°	147.4	147.1	146.8	146.4	146.1	145.4	144.2	143.1	141.9	140.7	139.8
62.5°	136.2	135.6	135.1	134.6	134.0	133.3	132.4	131.6	130.7	129.8	128.9
65°	118.9	118.4	117.9	117.4	116.9	116.3	115.4	114.6	113.8	113.0	112.2
67.5°	101.3	100.9	100.5	100.1	99.8	99.2	98.4	97.7	96.9	96.2	95.6
70°	90.3	90.0	89.7	89.4	89.0	88.5	87.8	87.1	86.3	85.5	85.0
72.5°	79.1	78.8	78.4	78.1	77.8	77.4	76.9	76.5	76.0	75.5	74.9
75°	62.2	62.0	61.9	61.7	61.6	61.3	60.9	60.4	60.0	59.6	59.1
77.5°	47.1	46.8	46.6	46.3	46.0	45.7	45.6	45.4	45.2	45.1	44.8
80°	37.0	36.9	36.9	36.8	36.7	36.6	36.4	36.3	36.1	36.0	35.7
82.5°	27.6	27.6	27.6	27.5	27.5	27.4	27.3	27.2	27.1	27.1	26.7
85°	15.2	15.1	15.0	14.9	14.8	14.8	14.7	14.6	14.5	14.4	14.2
87.5°	5.5	6.1	6.6	7.2	7.7	8.5	9.5	10.6	11.7	12.7	12.5
90°	1.2	4.5	7.7	11.1	14.3	19.0	25.0	31.0	37.0	43.0	42.5
92.5°	21.9	24.3	26.7	29.1	31.5	33.4	34.8	36.3	37.7	39.1	39.2
95°	63.9	66.6	69.4	72.1	74.8	76.5	77.0	77.5	78.1	78.7	78.7
97.5°	116.8	119.2	121.6	124.0	126.4	128.1	129.1	130.2	131.2	132.2	132.2
100°	156.1	158.2	160.5	162.7	164.9	166.3	167.1	168.0	168.8	169.6	169.6
102.5°	197.4	199.2	200.9	202.6	204.4	205.8	206.8	207.8	208.9	209.9	210.2
105°	264.2	265.1	265.9	266.7	267.5	268.2	268.8	269.3	269.9	270.4	270.9
107.5°	331.6	332.8	334.0	335.3	336.4	337.0	337.0	337.0	337.0	337.0	337.2
110°	374.9	376.5	378.1	379.8	381.4	382.3	382.3	382.3	382.3	382.3	382.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	422.1	423.7	425.3	427.0	428.6	429.3	429.1	428.9	428.7	428.4	427.8
115°	491.6	493.3	494.9	496.6	498.2	498.7	498.2	497.7	497.1	496.6	496.3
117.5°	561.0	563.1	565.3	567.5	569.7	570.1	568.5	567.0	565.4	563.9	563.3
120°	607.2	609.4	611.6	613.8	616.0	616.0	613.8	611.6	609.4	607.2	607.2
122.5°	649.5	652.1	654.7	657.3	660.0	660.5	659.0	657.5	655.9	654.4	653.7
125°	715.3	717.8	720.2	722.7	725.2	726.0	725.2	724.4	723.6	722.7	721.9
127.5°	779.5	782.6	785.7	788.9	792.0	793.0	792.1	791.1	790.1	789.1	788.1
130°	819.8	823.4	827.0	830.5	834.1	835.5	834.9	834.5	833.9	833.3	832.8
132.5°	865.0	868.0	870.8	873.8	876.6	878.2	878.2	878.3	878.5	878.6	877.3
135°	925.5	928.5	931.6	934.5	937.5	939.3	939.9	940.4	940.9	941.5	941.3
137.5°	989.2	991.6	994.1	996.5	999.0	1000.6	1001.4	1002.0	1002.7	1003.5	1003.2
140°	1027.5	1030.0	1032.5	1034.9	1037.4	1039.3	1040.6	1042.0	1043.4	1044.7	1044.7
142.5°	1066.9	1069.3	1071.8	1074.2	1076.7	1078.4	1079.3	1080.3	1081.2	1082.1	1082.3
145°	1123.4	1125.4	1127.2	1129.1	1131.1	1132.9	1134.5	1136.1	1137.8	1139.4	1139.6
147.5°	1173.8	1176.1	1178.4	1180.7	1183.0	1184.7	1185.8	1186.8	1188.0	1189.0	1189.7
150°	1208.2	1209.8	1211.5	1213.2	1214.8	1216.1	1217.2	1218.3	1219.4	1220.5	1221.3
152.5°	1238.7	1240.3	1241.9	1243.6	1245.3	1246.8	1248.1	1249.4	1250.7	1252.0	1253.0
155°	1284.4	1285.2	1286.1	1286.9	1287.7	1288.5	1289.3	1290.1	1290.9	1291.8	1293.1
157.5°	1323.5	1324.0	1324.6	1325.2	1325.7	1326.2	1326.7	1327.2	1327.7	1328.2	1330.0
160°	1347.1	1347.7	1348.2	1348.7	1349.3	1349.7	1350.0	1350.2	1350.5	1350.8	1352.4
162.5°	1368.7	1368.9	1369.0	1369.1	1369.2	1369.4	1369.6	1369.9	1370.2	1370.4	1372.3
165°	1397.5	1397.3	1396.9	1396.7	1396.4	1396.3	1396.3	1396.3	1396.3	1396.3	1398.2
167.5°	1421.6	1420.7	1419.9	1419.1	1418.3	1417.9	1417.8	1417.8	1417.7	1417.6	1419.6
170°	1434.4	1433.5	1432.7	1431.9	1431.1	1430.5	1430.3	1430.0	1429.7	1429.5	1431.3
172.5°	1443.2	1442.4	1441.6	1440.8	1440.0	1439.4	1439.2	1438.8	1438.6	1438.3	1440.2
175°	1454.0	1453.2	1452.4	1451.6	1450.7	1450.1	1449.5	1448.9	1448.5	1447.9	1449.8
177.5°	1458.5	1457.8	1457.2	1456.5	1455.9	1455.3	1454.8	1454.4	1454.0	1453.5	1454.8
180°	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1
2.5°	383.5	384.2	384.8	385.1	385.0	384.8	384.7	384.6
5°	381.0	381.6	382.3	382.5	382.4	382.2	382.0	381.9
7.5°	376.7	377.3	378.0	378.2	378.1	377.8	377.6	377.5
10°	372.8	373.5	374.1	374.3	374.1	373.8	373.6	373.3
12.5°	368.3	368.7	369.2	369.3	369.2	368.9	368.8	368.6
15°	360.3	360.6	360.9	360.9	360.5	360.1	359.7	359.3
17.5°	350.8	351.2	351.6	351.6	351.1	350.8	350.4	350.0
20°	343.5	343.7	344.0	343.9	343.6	343.2	342.9	342.6
22.5°	335.7	335.7	335.7	335.7	335.5	335.3	335.1	334.9
25°	322.9	323.1	323.3	323.3	323.1	322.9	322.8	322.6
27.5°	310.4	310.1	309.9	309.6	309.2	308.8	308.4	308.0
30°	300.6	300.4	300.1	299.9	299.5	299.2	298.9	298.5
32.5°	291.1	290.6	290.2	289.8	289.4	289.1	288.8	288.5
35°	275.7	275.2	274.7	274.3	273.9	273.5	273.0	272.6
37.5°	260.2	259.7	259.0	258.5	258.1	257.7	257.4	257.0
40°	249.6	248.9	248.2	247.6	247.3	247.0	246.6	246.3
42.5°	239.1	238.3	237.5	236.8	236.4	235.9	235.5	235.1
45°	223.0	222.1	221.2	220.5	220.2	219.9	219.6	219.2
47.5°	206.3	205.3	204.3	203.6	203.2	202.7	202.2	201.7
50°	195.5	194.3	193.1	192.4	192.0	191.6	191.2	190.8
52.5°	184.3	183.4	182.4	181.6	181.1	180.6	180.0	179.4
55°	167.6	166.6	165.7	165.0	164.6	164.1	163.7	163.3
57.5°	150.3	149.4	148.4	147.7	147.5	147.2	146.8	146.5
60°	138.9	138.0	137.1	136.6	136.3	136.1	135.8	135.6
62.5°	128.1	127.3	126.5	125.9	125.6	125.2	124.9	124.6
65°	111.5	110.7	110.0	109.4	109.0	108.6	108.2	107.8
67.5°	95.1	94.5	93.9	93.4	93.1	92.8	92.5	92.1
70°	84.4	83.8	83.2	82.8	82.5	82.1	81.8	81.4
72.5°	74.4	73.8	73.2	72.7	72.5	72.2	72.0	71.7
75°	58.6	58.1	57.6	57.5	57.6	57.8	58.0	58.1
77.5°	44.6	44.4	44.1	43.9	43.6	43.5	43.2	43.0
80°	35.5	35.2	35.0	34.7	34.6	34.4	34.2	34.1
82.5°	26.4	26.1	25.8	25.6	25.6	25.5	25.5	25.5
85°	13.9	13.7	13.5	13.3	13.2	13.1	13.0	13.0
87.5°	12.1	11.8	11.5	11.3	11.3	11.3	11.3	11.3
90°	41.9	41.4	40.8	40.7	41.0	41.3	41.5	41.8
92.5°	39.3	39.4	39.5	39.6	39.6	39.7	39.8	39.8
95°	78.7	78.7	78.7	78.4	77.9	77.3	76.7	76.2
97.5°	132.2	132.2	132.2	132.2	132.2	132.1	132.1	132.0
100°	169.6	169.6	169.6	169.5	169.2	168.9	168.7	168.4
102.5°	210.3	210.6	210.8	210.8	210.5	210.3	209.9	209.7
105°	271.5	272.1	272.6	272.9	272.9	272.9	272.9	272.9
107.5°	337.5	337.7	337.9	337.4	336.1	334.8	333.6	332.3
110°	382.3	382.3	382.3	381.8	381.0	380.2	379.4	378.5





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CATALOG NUMBER: S122DIW-S290D1440U930-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	427.1	426.5	425.8	425.2	424.6	424.0	423.4	422.8
115°	496.0	495.7	495.5	494.9	494.1	493.3	492.4	491.6
117.5°	562.6	562.0	561.3	560.5	559.7	558.9	558.1	557.3
120°	607.2	607.2	607.2	606.7	605.9	605.1	604.3	603.5
122.5°	653.1	652.4	651.8	651.1	650.5	650.0	649.3	648.7
125°	721.1	720.2	719.4	718.9	718.6	718.4	718.1	717.8
127.5°	787.1	786.1	785.1	784.2	783.3	782.4	781.6	780.7
130°	832.3	831.7	831.1	830.3	829.2	828.2	827.0	826.0
132.5°	876.2	875.0	873.8	872.7	871.9	871.0	870.1	869.2
135°	940.9	940.7	940.4	939.9	939.1	938.2	937.4	936.6
137.5°	1003.0	1002.8	1002.6	1001.9	1000.9	999.7	998.7	997.5
140°	1044.7	1044.7	1044.7	1044.2	1043.1	1042.0	1040.9	1039.8
142.5°	1082.6	1082.8	1083.0	1082.6	1081.5	1080.4	1079.3	1078.2
145°	1140.0	1140.2	1140.4	1140.0	1139.0	1137.9	1136.8	1135.7
147.5°	1190.3	1190.8	1191.5	1191.2	1190.2	1189.1	1188.1	1187.1
150°	1222.1	1222.9	1223.8	1223.8	1222.9	1222.1	1221.3	1220.5
152.5°	1254.0	1255.1	1256.1	1256.1	1255.1	1254.0	1253.0	1252.0
155°	1294.5	1295.9	1297.2	1297.5	1296.7	1295.9	1295.1	1294.3
157.5°	1331.9	1333.7	1335.6	1335.9	1334.6	1333.3	1332.0	1330.6
160°	1354.0	1355.7	1357.3	1357.6	1356.5	1355.4	1354.4	1353.2
162.5°	1374.2	1376.1	1377.9	1378.2	1376.9	1375.6	1374.3	1372.9
165°	1400.1	1402.0	1403.9	1404.2	1402.8	1401.5	1400.1	1398.7
167.5°	1421.5	1423.4	1425.3	1425.6	1424.2	1422.7	1421.3	1419.8
170°	1433.3	1435.2	1437.1	1437.2	1435.6	1433.9	1432.3	1430.7
172.5°	1442.1	1444.1	1445.9	1446.1	1444.5	1442.8	1441.2	1439.6
175°	1451.7	1453.6	1455.6	1455.7	1454.0	1452.4	1450.7	1449.1
177.5°	1456.2	1457.5	1458.8	1458.8	1457.5	1456.2	1454.8	1453.5
180°	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5

(END OF REPORT)