

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: P331494-940

Luminaire Tested: **S122DIW-S290D1440U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331494-940  
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-S290D1440U940-4F0-1E-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: 5532.5 lumens  
Efficiency: N/A  
Efficacy: 103.6 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

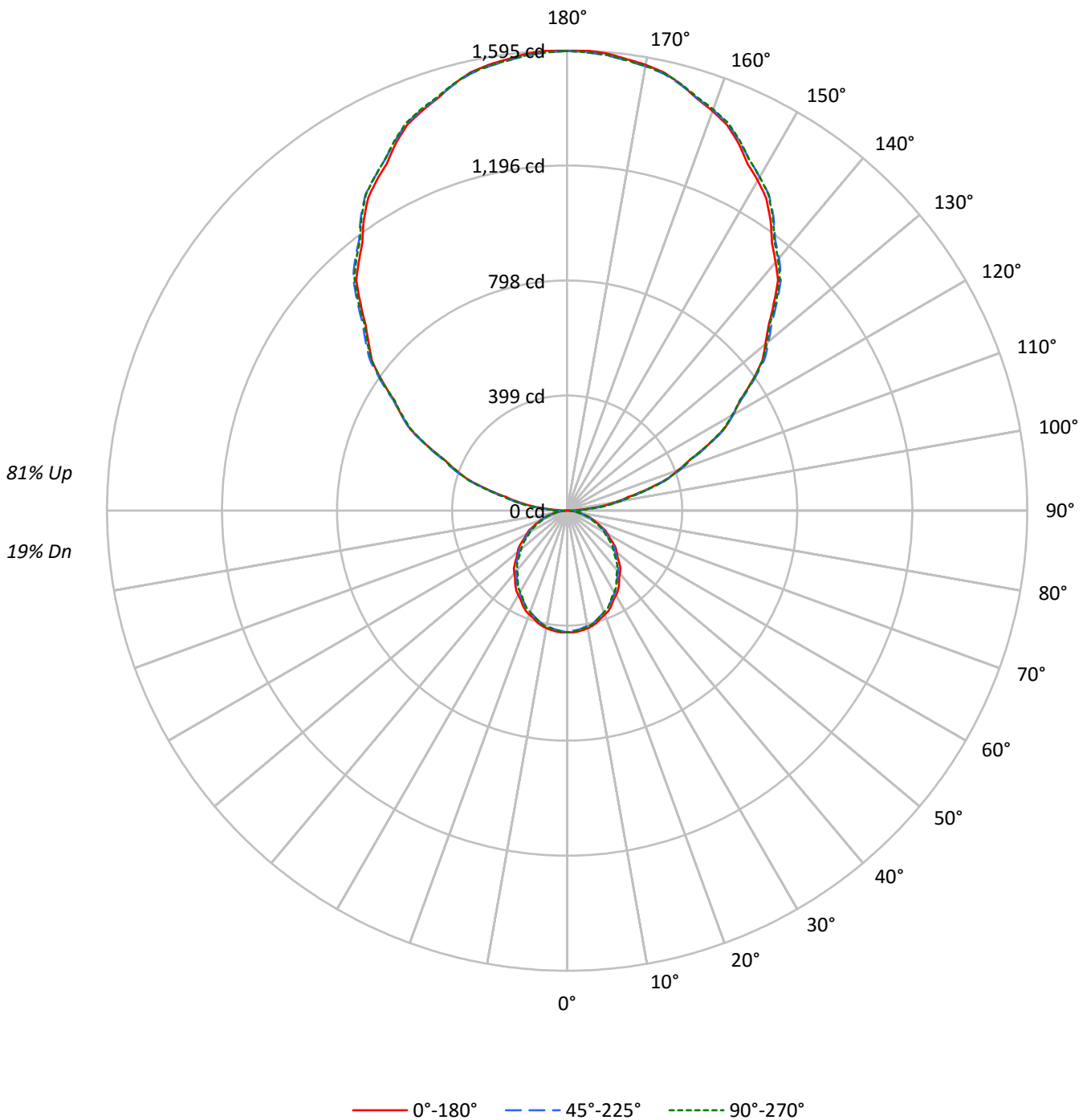
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	6801	6801	6801
5°	6827	6729	6770
10°	6787	6661	6694
15°	6703	6574	6569
20°	6584	6445	6438
25°	6465	6285	6285
30°	6315	6139	6087
35°	6173	5964	5876
40°	5994	5788	5678
45°	5818	5613	5476
50°	5627	5433	5242
55°	5427	5225	5027
60°	5205	4970	4789
65°	4967	4722	4504
70°	4664	4414	4206
75°	4242	4067	3968
80°	3766	3654	3468
85°	3075	2927	2631



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	39.6	0.7
10°-20°	111.5	2.0
20°-30°	163.8	3.0
30°-40°	190.3	3.4
40°-50°	190.1	3.4
50°-60°	165.8	3.0
60°-70°	122.6	2.2
70°-80°	69.4	1.3
80°-90°	25.0	0.5
90°-100°	100.9	1.8
100°-110°	313.5	5.7
110°-120°	535.9	9.7
120°-130°	704.7	12.7
130°-140°	791.0	14.3
140°-150°	775.6	14.0
150°-160°	650.5	11.8
160°-170°	431.5	7.8
170°-180°	150.8	2.7
0°-30°	314.9	5.7
0°-40°	505.2	9.1
0°-60°	861.1	15.6
0°-90°	1078.1	19.5
90°-120°	950.3	17.2
90°-150°	3221.6	58.2
90°-180°	4454.0	80.5
0°-180°	5532.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	421	421	421	421	421	
5°	421	420	415	418	418	40
15°	401	398	393	395	393	113
25°	363	360	353	354	353	167
35°	313	309	303	300	298	195
45°	255	252	246	242	240	197
55°	193	190	186	181	179	172
65°	130	128	124	120	118	129
75°	68	67	65	63	64	73
85°	17	16	16	15	14	19
90°	1	18	47	45	46	4
95°	70	83	86	86	83	80
105°	289	293	296	298	298	305
115°	538	545	543	542	538	532
125°	782	794	790	787	785	699
135°	1012	1026	1030	1028	1024	782
145°	1229	1238	1246	1247	1242	767
155°	1405	1409	1413	1419	1416	646
165°	1528	1527	1527	1536	1530	431
175°	1590	1586	1584	1592	1585	151
180°	1593	1593	1593	1593	1593	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2
2.5°	423.2	422.8	422.5	422.1	421.8	421.2	420.4	419.6	418.8	418.0	418.7
5°	421.2	420.9	420.5	420.2	419.8	419.2	418.2	417.2	416.2	415.2	415.9
7.5°	417.6	417.0	416.4	415.9	415.4	414.6	413.6	412.5	411.5	410.5	411.3
10°	414.0	413.4	412.8	412.1	411.4	410.6	409.6	408.5	407.4	406.3	407.0
12.5°	409.1	408.6	408.0	407.4	406.9	406.1	405.0	403.9	402.9	401.8	402.3
15°	401.0	400.5	399.9	399.4	398.9	398.1	396.8	395.7	394.5	393.3	393.7
17.5°	390.7	390.1	389.6	389.1	388.5	387.6	386.5	385.2	384.1	382.9	383.3
20°	383.2	382.6	382.1	381.6	381.0	380.1	378.9	377.6	376.4	375.1	375.4
22.5°	375.8	375.0	374.3	373.4	372.7	371.8	370.6	369.3	368.2	367.0	367.0
25°	362.9	362.2	361.5	360.8	360.1	358.9	357.4	355.9	354.4	352.8	353.0
27.5°	348.4	347.8	347.1	346.4	345.8	344.8	343.7	342.4	341.3	340.0	339.7
30°	338.7	338.0	337.2	336.5	335.7	334.7	333.4	332.1	330.6	329.3	329.0
32.5°	328.2	327.7	327.2	326.5	326.0	324.9	323.5	322.2	320.7	319.3	318.8
35°	313.2	312.2	311.3	310.4	309.5	308.4	306.9	305.5	304.1	302.6	302.0
37.5°	296.0	295.2	294.4	293.6	292.8	291.8	290.3	288.9	287.4	286.0	285.3
40°	284.4	283.7	282.9	282.2	281.5	280.4	278.9	277.5	276.1	274.6	273.8
42.5°	273.0	272.3	271.6	270.9	270.2	269.0	267.6	266.2	264.7	263.3	262.4
45°	254.8	254.1	253.5	252.9	252.3	251.3	249.9	248.6	247.3	245.8	244.9
47.5°	236.7	236.0	235.5	234.9	234.3	233.3	231.8	230.5	229.1	227.7	226.6
50°	224.0	223.6	223.1	222.7	222.2	221.3	220.1	218.8	217.6	216.3	215.1
52.5°	211.7	211.1	210.5	209.9	209.3	208.4	207.2	206.1	204.8	203.7	202.6
55°	192.8	192.3	191.7	191.2	190.6	189.8	188.8	187.7	186.6	185.6	184.4
57.5°	173.9	173.4	173.0	172.5	172.1	171.3	170.1	169.0	167.7	166.6	165.5
60°	161.2	160.9	160.5	160.2	159.8	159.0	157.7	156.5	155.2	153.9	152.9
62.5°	148.9	148.3	147.8	147.2	146.6	145.8	144.8	143.9	142.9	142.0	141.0
65°	130.0	129.5	128.9	128.4	127.9	127.2	126.3	125.4	124.5	123.6	122.7
67.5°	110.8	110.4	109.9	109.5	109.1	108.5	107.6	106.8	106.0	105.2	104.6
70°	98.8	98.4	98.1	97.7	97.4	96.8	96.0	95.2	94.3	93.5	92.9
72.5°	86.5	86.1	85.8	85.4	85.1	84.6	84.1	83.6	83.1	82.6	81.9
75°	68.0	67.9	67.7	67.5	67.3	67.1	66.6	66.1	65.6	65.2	64.6
77.5°	51.5	51.2	50.9	50.6	50.3	50.0	49.8	49.7	49.5	49.3	49.0
80°	40.5	40.4	40.3	40.2	40.1	40.0	39.9	39.7	39.5	39.3	39.1
82.5°	30.1	30.1	30.1	30.1	30.1	30.0	29.9	29.8	29.7	29.6	29.2
85°	16.6	16.5	16.4	16.3	16.2	16.1	16.1	16.0	15.9	15.8	15.5
87.5°	6.1	6.7	7.2	7.8	8.4	9.3	10.4	11.6	12.8	13.9	13.6
90°	1.3	4.9	8.5	12.1	15.7	20.8	27.4	33.9	40.5	47.1	46.5
92.5°	23.9	26.6	29.2	31.8	34.4	36.6	38.1	39.7	41.2	42.7	42.9
95°	69.9	72.9	75.9	78.8	81.9	83.6	84.3	84.8	85.4	86.1	86.1
97.5°	127.7	130.4	133.0	135.6	138.2	140.1	141.2	142.4	143.5	144.6	144.6
100°	170.8	173.1	175.5	177.9	180.3	181.9	182.8	183.7	184.6	185.5	185.5
102.5°	215.9	217.8	219.7	221.6	223.6	225.1	226.2	227.3	228.5	229.6	229.9
105°	289.0	289.9	290.8	291.7	292.6	293.4	294.0	294.5	295.2	295.8	296.3
107.5°	362.7	364.0	365.3	366.7	367.9	368.6	368.6	368.6	368.6	368.6	368.8
110°	410.0	411.8	413.6	415.4	417.1	418.1	418.1	418.1	418.1	418.1	418.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	461.6	463.4	465.2	467.0	468.8	469.6	469.3	469.1	468.9	468.6	467.9
115°	537.7	539.5	541.3	543.1	544.9	545.5	544.9	544.3	543.7	543.1	542.8
117.5°	613.6	615.9	618.3	620.7	623.1	623.5	621.8	620.1	618.4	616.8	616.1
120°	664.1	666.5	668.9	671.3	673.7	673.7	671.3	668.9	666.5	664.1	664.1
122.5°	710.3	713.2	716.0	718.9	721.8	722.4	720.8	719.1	717.4	715.7	715.0
125°	782.4	785.1	787.7	790.4	793.2	794.1	793.2	792.3	791.4	790.4	789.5
127.5°	852.6	856.0	859.3	862.8	866.2	867.4	866.3	865.2	864.2	863.1	861.9
130°	896.6	900.5	904.5	908.3	912.2	913.8	913.2	912.7	912.0	911.4	910.9
132.5°	946.1	949.3	952.4	955.6	958.8	960.5	960.6	960.6	960.8	960.9	959.6
135°	1012.3	1015.6	1018.9	1022.1	1025.4	1027.3	1028.0	1028.6	1029.1	1029.7	1029.5
137.5°	1081.9	1084.6	1087.3	1089.9	1092.6	1094.4	1095.2	1095.9	1096.7	1097.5	1097.3
140°	1123.8	1126.5	1129.3	1131.9	1134.6	1136.7	1138.2	1139.7	1141.2	1142.6	1142.6
142.5°	1166.9	1169.6	1172.2	1174.9	1177.6	1179.5	1180.4	1181.5	1182.5	1183.6	1183.7
145°	1228.7	1230.8	1232.9	1234.9	1237.1	1239.0	1240.8	1242.6	1244.4	1246.2	1246.4
147.5°	1283.8	1286.3	1288.8	1291.4	1293.9	1295.7	1296.9	1298.1	1299.3	1300.5	1301.2
150°	1321.4	1323.2	1325.1	1326.9	1328.6	1330.1	1331.3	1332.5	1333.7	1334.9	1335.8
152.5°	1354.8	1356.6	1358.3	1360.1	1362.0	1363.6	1365.0	1366.5	1367.9	1369.3	1370.5
155°	1404.8	1405.7	1406.6	1407.5	1408.4	1409.3	1410.2	1411.0	1411.9	1412.8	1414.3
157.5°	1447.5	1448.1	1448.8	1449.4	1449.9	1450.5	1451.1	1451.6	1452.2	1452.7	1454.6
160°	1473.4	1474.0	1474.5	1475.2	1475.8	1476.2	1476.5	1476.8	1477.1	1477.4	1479.2
162.5°	1497.0	1497.2	1497.3	1497.4	1497.5	1497.7	1498.0	1498.3	1498.6	1498.9	1500.9
165°	1528.5	1528.2	1527.9	1527.6	1527.3	1527.1	1527.1	1527.1	1527.1	1527.1	1529.2
167.5°	1554.8	1553.9	1553.0	1552.1	1551.2	1550.8	1550.7	1550.7	1550.6	1550.5	1552.6
170°	1568.8	1567.9	1567.0	1566.1	1565.2	1564.6	1564.3	1564.1	1563.7	1563.4	1565.5
172.5°	1578.5	1577.6	1576.7	1575.8	1574.9	1574.3	1574.0	1573.7	1573.4	1573.1	1575.2
175°	1590.3	1589.4	1588.5	1587.6	1586.7	1586.0	1585.4	1584.7	1584.2	1583.6	1585.7
177.5°	1595.2	1594.5	1593.8	1593.0	1592.3	1591.7	1591.2	1590.7	1590.3	1589.7	1591.2
180°	1593.0	1593.0	1593.0	1593.0	1593.0	1593.0	1593.0	1593.0	1593.0	1593.0	1593.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2
2.5°	419.5	420.2	420.9	421.2	421.1	420.9	420.8	420.6
5°	416.7	417.4	418.1	418.4	418.2	418.0	417.9	417.7
7.5°	412.0	412.7	413.4	413.7	413.5	413.2	413.0	412.9
10°	407.8	408.5	409.2	409.4	409.1	408.8	408.6	408.3
12.5°	402.8	403.2	403.8	403.9	403.8	403.5	403.3	403.1
15°	394.0	394.4	394.8	394.8	394.3	393.9	393.4	393.0
17.5°	383.7	384.1	384.5	384.5	384.1	383.7	383.3	382.8
20°	375.7	375.9	376.2	376.1	375.8	375.4	375.1	374.7
22.5°	367.1	367.2	367.2	367.1	366.9	366.7	366.5	366.3
25°	353.2	353.4	353.6	353.6	353.4	353.2	353.0	352.8
27.5°	339.5	339.2	338.9	338.6	338.1	337.7	337.3	336.9
30°	328.8	328.5	328.2	328.0	327.6	327.3	326.9	326.5
32.5°	318.3	317.8	317.4	316.9	316.6	316.2	315.8	315.5
35°	301.5	301.0	300.4	300.0	299.5	299.1	298.6	298.1
37.5°	284.6	284.0	283.3	282.8	282.3	281.9	281.5	281.1
40°	273.0	272.2	271.4	270.8	270.5	270.1	269.7	269.4
42.5°	261.5	260.6	259.8	259.0	258.6	258.1	257.6	257.1
45°	243.9	242.9	241.9	241.2	240.9	240.5	240.1	239.8
47.5°	225.6	224.5	223.5	222.7	222.2	221.7	221.1	220.6
50°	213.8	212.5	211.2	210.4	210.0	209.6	209.1	208.7
52.5°	201.6	200.5	199.5	198.7	198.0	197.5	196.9	196.3
55°	183.3	182.3	181.2	180.5	180.0	179.5	179.1	178.6
57.5°	164.4	163.4	162.3	161.6	161.3	161.0	160.6	160.2
60°	151.9	151.0	150.0	149.4	149.1	148.8	148.6	148.3
62.5°	140.1	139.2	138.3	137.7	137.3	137.0	136.6	136.3
65°	121.9	121.1	120.3	119.7	119.2	118.8	118.3	117.9
67.5°	104.0	103.3	102.7	102.2	101.8	101.5	101.1	100.8
70°	92.3	91.7	91.0	90.6	90.2	89.8	89.4	89.1
72.5°	81.3	80.7	80.1	79.5	79.3	79.0	78.7	78.4
75°	64.1	63.6	63.0	62.9	63.0	63.2	63.4	63.6
77.5°	48.8	48.5	48.2	48.0	47.7	47.5	47.3	47.0
80°	38.8	38.5	38.3	38.0	37.8	37.6	37.5	37.3
82.5°	28.9	28.5	28.2	28.0	28.0	27.9	27.9	27.9
85°	15.2	15.0	14.7	14.5	14.4	14.4	14.3	14.2
87.5°	13.3	12.9	12.6	12.4	12.4	12.4	12.4	12.4
90°	45.8	45.3	44.7	44.5	44.9	45.1	45.4	45.7
92.5°	43.0	43.1	43.2	43.3	43.3	43.4	43.5	43.5
95°	86.1	86.1	86.1	85.7	85.2	84.5	83.9	83.4
97.5°	144.6	144.6	144.6	144.6	144.5	144.5	144.5	144.4
100°	185.5	185.5	185.5	185.4	185.0	184.8	184.5	184.1
102.5°	230.1	230.3	230.6	230.5	230.2	230.0	229.6	229.3
105°	296.9	297.6	298.1	298.5	298.5	298.5	298.5	298.5
107.5°	369.1	369.3	369.5	369.0	367.7	366.2	364.9	363.5
110°	418.1	418.1	418.1	417.6	416.7	415.8	414.9	414.0





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CATALOG NUMBER: S122DIW-S290D1440U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	467.2	466.5	465.7	465.0	464.4	463.8	463.1	462.4
115°	542.5	542.2	541.9	541.3	540.4	539.5	538.6	537.7
117.5°	615.4	614.7	613.9	613.1	612.2	611.3	610.4	609.5
120°	664.1	664.1	664.1	663.6	662.7	661.8	660.9	660.0
122.5°	714.3	713.5	712.8	712.1	711.5	710.9	710.2	709.5
125°	788.6	787.7	786.8	786.3	786.0	785.7	785.4	785.1
127.5°	860.9	859.8	858.7	857.7	856.8	855.8	854.9	853.9
130°	910.3	909.6	909.0	908.1	907.0	905.8	904.6	903.4
132.5°	958.3	957.0	955.6	954.5	953.6	952.6	951.6	950.7
135°	1029.1	1028.9	1028.6	1028.0	1027.1	1026.2	1025.3	1024.4
137.5°	1097.0	1096.8	1096.5	1095.8	1094.7	1093.4	1092.3	1091.0
140°	1142.6	1142.6	1142.6	1142.1	1140.9	1139.7	1138.4	1137.3
142.5°	1184.0	1184.3	1184.5	1184.0	1182.9	1181.6	1180.4	1179.2
145°	1246.8	1247.1	1247.3	1246.9	1245.7	1244.6	1243.3	1242.2
147.5°	1301.8	1302.4	1303.1	1302.9	1301.7	1300.6	1299.5	1298.3
150°	1336.7	1337.6	1338.5	1338.5	1337.6	1336.7	1335.8	1334.9
152.5°	1371.5	1372.7	1373.9	1373.9	1372.7	1371.5	1370.5	1369.3
155°	1415.9	1417.4	1418.8	1419.2	1418.3	1417.4	1416.5	1415.6
157.5°	1456.7	1458.7	1460.8	1461.1	1459.6	1458.2	1456.8	1455.4
160°	1481.0	1482.7	1484.5	1484.9	1483.6	1482.5	1481.3	1480.1
162.5°	1503.0	1505.0	1507.0	1507.3	1505.9	1504.5	1503.1	1501.6
165°	1531.3	1533.4	1535.5	1535.8	1534.3	1532.9	1531.3	1529.8
167.5°	1554.7	1556.8	1558.9	1559.2	1557.6	1556.0	1554.5	1552.9
170°	1567.6	1569.7	1571.8	1571.9	1570.1	1568.3	1566.6	1564.8
172.5°	1577.3	1579.4	1581.4	1581.6	1579.8	1578.1	1576.3	1574.5
175°	1587.8	1589.8	1592.0	1592.1	1590.3	1588.5	1586.7	1584.9
177.5°	1592.7	1594.1	1595.5	1595.5	1594.1	1592.7	1591.2	1589.7
180°	1593.0	1593.0	1593.0	1593.0	1593.0	1593.0	1593.0	1593.0

(END OF REPORT)