

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: P331485-840

Luminaire Tested: **S122DIW-S290D1240U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331485-840
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-S290D1240U840-4F0-1E-UDD-D
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1240 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6214.9 lumens
Efficiency: N/A
Efficacy: 133.4 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

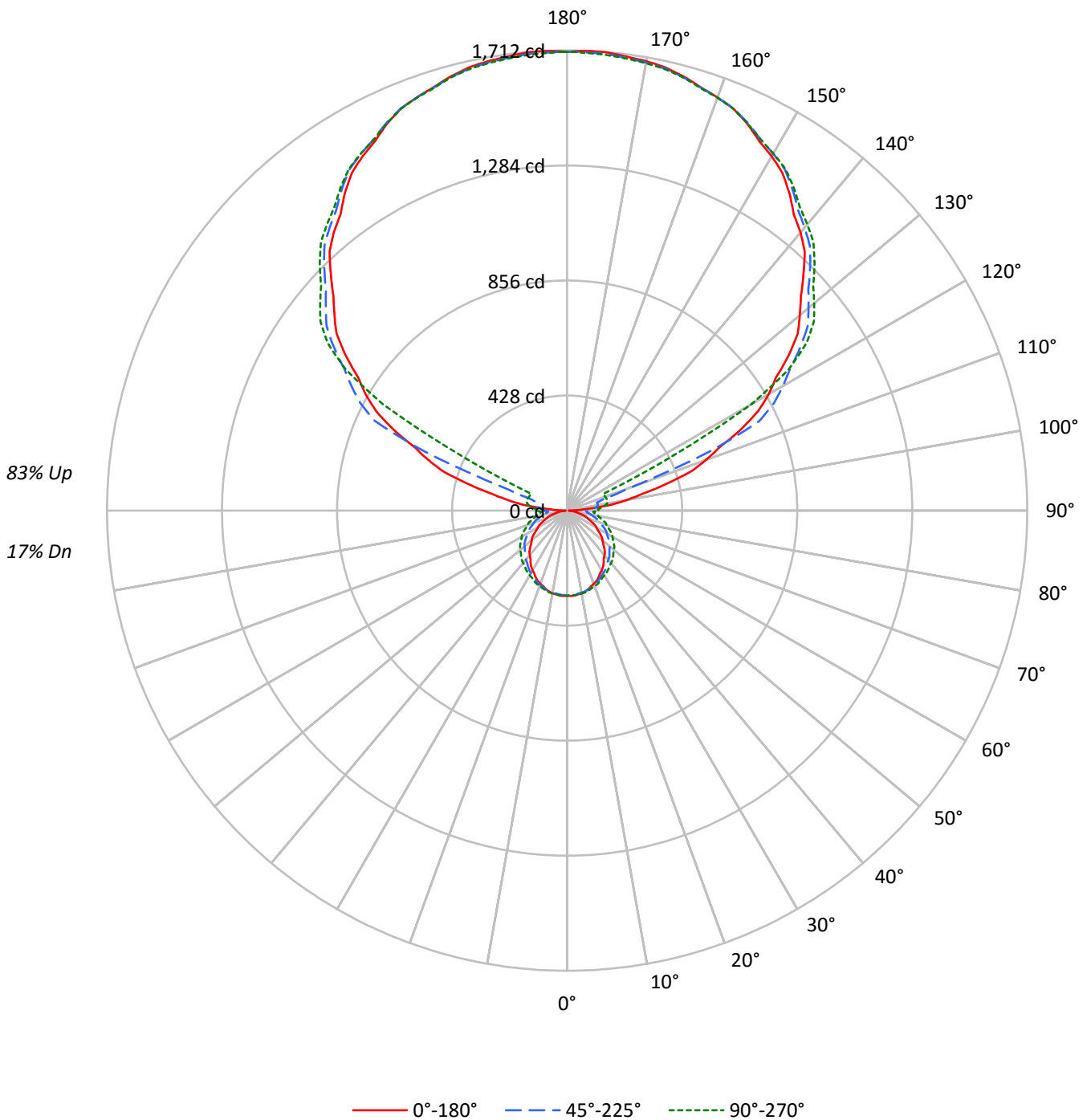
Input Watts (W): 46.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P331485-840

CATALOG NUMBER: S122DIW-S290D1240U840-4F0-1E-UDD-D

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	99	99	99	99	87	87	87	87	65	65	65	45	45	45	26	26	26	17
1	90	86	82	78	79	75	72	69	56	54	52	38	37	36	22	22	21	13
2	82	74	68	63	71	65	60	56	49	45	43	33	31	30	19	18	17	11
3	74	65	58	52	65	57	51	47	43	39	35	29	27	25	17	15	14	9
4	68	57	50	44	59	51	44	39	38	33	30	26	23	21	15	13	12	8
5	62	51	43	37	54	45	38	33	34	29	25	23	20	18	13	12	10	6
6	57	45	37	32	50	40	33	29	30	25	22	21	18	15	12	10	9	6
7	52	41	33	28	46	36	29	25	27	22	19	19	16	14	11	9	8	5
8	48	37	29	24	42	32	26	22	24	20	17	17	14	12	10	8	7	4
9	45	33	26	21	39	29	23	19	22	18	15	16	13	11	9	8	6	4
10	42	30	23	19	37	27	21	17	20	16	13	14	11	9	8	7	6	4

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5112	5112	5112
5°	5137	4921	4901
10°	5105	4774	4722
15°	5033	4621	4531
20°	4944	4456	4348
25°	4857	4297	4181
30°	4733	4133	4015
35°	4608	3975	3898
40°	4476	3840	3780
45°	4351	3721	3681
50°	4218	3612	3581
55°	4076	3496	3482
60°	3902	3373	3374
65°	3723	3232	3247
70°	3523	3079	3110
75°	3270	2929	2984
80°	2861	2776	2858
85°	2484	2642	2759



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.0	0.5
10°-20°	86.0	1.4
20°-30°	130.3	2.1
30°-40°	158.8	2.6
40°-50°	170.8	2.7
50°-60°	165.9	2.7
60°-70°	144.8	2.3
70°-80°	111.5	1.8
80°-90°	79.0	1.3
90°-100°	108.5	1.7
100°-110°	246.5	4.0
110°-120°	583.1	9.4
120°-130°	935.4	15.1
130°-140°	985.8	15.9
140°-150°	911.9	14.7
150°-160°	732.3	11.8
160°-170°	471.9	7.6
170°-180°	162.4	2.6
0°-30°	246.3	4.0
0°-40°	405.1	6.5
0°-60°	741.7	11.9
0°-90°	1077.1	17.3
90°-120°	938.1	15.1
90°-150°	3771.1	60.7
90°-180°	5138.0	82.7
0°-180°	6214.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	317	317	317	317	317	
5°	318	316	313	316	316	30
15°	303	304	304	308	307	85
25°	275	278	283	288	289	127
35°	237	245	254	263	267	148
45°	194	207	223	237	242	150
55°	149	166	190	205	212	133
65°	102	125	151	170	176	101
75°	56	82	112	130	137	60
85°	17	45	74	93	100	18
90°	6	46	85	109	118	7
95°	84	68	101	123	129	101
105°	378	408	115	143	154	404
115°	712	740	790	258	148	701
125°	1005	1023	1059	1080	1088	896
135°	1243	1263	1279	1300	1302	960
145°	1442	1442	1461	1472	1469	901
155°	1587	1578	1591	1598	1589	731
165°	1673	1666	1669	1677	1669	472
175°	1711	1703	1705	1712	1701	163
180°	1707	1707	1707	1707	1707	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6
2.5°	318.4	318.1	317.9	317.6	317.4	317.0	316.4	315.9	315.3	314.7	315.1
5°	317.5	317.2	316.9	316.6	316.2	315.8	315.2	314.6	314.0	313.4	314.0
7.5°	314.6	314.4	314.2	314.0	313.8	313.5	313.0	312.6	312.0	311.5	312.4
10°	312.5	312.3	312.0	311.8	311.6	311.3	311.0	310.7	310.4	310.1	310.9
12.5°	308.7	308.8	308.8	308.9	308.9	308.8	308.6	308.4	308.1	307.9	308.7
15°	302.8	303.0	303.2	303.4	303.6	303.7	303.7	303.7	303.7	303.7	304.6
17.5°	295.1	295.5	295.9	296.4	296.8	297.2	297.5	297.8	298.1	298.5	299.4
20°	289.9	290.4	290.9	291.4	292.0	292.5	292.9	293.3	293.7	294.1	295.2
22.5°	284.5	285.0	285.6	286.2	286.8	287.4	287.9	288.5	289.1	289.6	290.7
25°	275.3	276.0	276.7	277.4	278.1	278.9	279.8	280.7	281.7	282.6	283.8
27.5°	264.3	265.4	266.6	267.7	268.9	270.0	271.0	272.2	273.3	274.4	275.9
30°	256.9	258.2	259.5	260.8	262.2	263.6	264.9	266.2	267.5	268.8	270.4
32.5°	248.8	250.3	251.8	253.3	254.8	256.3	257.9	259.4	261.1	262.6	264.5
35°	237.2	238.9	240.7	242.4	244.1	245.9	247.9	249.8	251.8	253.7	255.9
37.5°	224.5	226.5	228.5	230.6	232.5	234.8	237.3	239.7	242.3	244.8	247.3
40°	216.1	218.3	220.6	222.8	225.0	227.5	230.2	233.1	235.8	238.5	241.2
42.5°	208.0	210.3	212.5	214.7	217.0	219.6	222.9	226.0	229.1	232.3	235.2
45°	194.5	197.2	200.1	202.8	205.5	208.6	212.3	215.8	219.3	223.0	226.1
47.5°	181.2	184.2	187.2	190.2	193.2	196.8	201.0	205.1	209.3	213.5	216.8
50°	172.1	175.2	178.3	181.5	184.7	188.5	193.2	197.7	202.3	206.9	210.4
52.5°	163.2	166.5	169.9	173.2	176.5	180.6	185.4	190.3	195.1	200.0	203.5
55°	149.1	152.8	156.4	160.1	163.8	168.2	173.6	178.8	184.2	189.5	193.2
57.5°	135.1	139.3	143.4	147.5	151.7	156.4	161.9	167.2	172.7	178.1	182.1
60°	125.2	129.7	134.0	138.4	142.8	147.8	153.7	159.5	165.3	171.1	175.0
62.5°	116.4	121.0	125.5	130.1	134.6	139.8	145.6	151.4	157.2	163.1	167.1
65°	101.8	106.8	111.8	116.8	121.8	127.3	133.3	139.4	145.4	151.4	155.6
67.5°	88.5	93.7	98.9	104.1	109.4	115.0	121.2	127.3	133.5	139.7	143.9
70°	78.9	84.2	89.5	94.8	100.1	105.9	112.2	118.6	124.9	131.2	135.6
72.5°	70.1	75.5	81.0	86.4	92.0	97.9	104.3	110.7	117.1	123.5	127.8
75°	56.5	62.1	67.9	73.5	79.3	85.3	91.9	98.5	104.9	111.5	115.8
77.5°	43.2	49.2	55.1	61.1	67.2	73.4	80.1	86.6	93.3	99.9	104.3
80°	34.4	40.6	46.9	53.0	59.3	65.7	72.3	79.0	85.5	92.2	96.4
82.5°	27.1	33.2	39.4	45.4	51.6	58.1	64.7	71.5	78.2	84.8	89.2
85°	16.6	22.8	29.2	35.4	41.8	48.2	54.7	61.3	67.8	74.3	78.6
87.5°	9.2	16.0	22.6	29.3	36.0	42.8	49.8	56.8	63.6	70.6	75.0
90°	5.9	14.7	23.7	32.6	41.5	50.4	59.1	67.9	76.5	85.2	90.7
92.5°	29.2	34.4	39.6	44.8	50.1	56.4	63.8	71.2	78.6	85.9	90.6
95°	83.9	79.7	75.4	71.2	66.9	68.8	76.9	84.8	92.9	100.9	106.1
97.5°	162.6	141.3	120.1	98.8	77.5	72.0	82.3	92.7	103.0	113.3	118.2
100°	221.9	188.0	154.2	120.4	86.5	74.8	85.1	95.5	105.9	116.3	122.3
102.5°	286.7	282.3	277.7	273.2	268.6	249.6	216.2	182.7	149.2	115.7	122.2
105°	377.8	389.0	400.2	411.4	422.6	393.3	323.8	254.1	184.4	114.8	121.4
107.5°	482.2	491.3	500.3	509.3	518.3	480.4	395.6	310.8	226.0	141.2	141.6
110°	549.1	556.8	564.7	572.5	580.3	547.0	472.7	398.4	324.0	249.6	225.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	612.4	619.1	626.0	632.8	639.6	635.6	620.8	605.9	591.1	576.2	479.3
115°	712.2	717.9	723.8	729.5	735.3	744.0	755.4	766.8	778.3	789.7	665.7
117.5°	800.9	806.8	812.7	818.7	824.7	832.1	841.1	850.1	859.0	868.0	840.2
120°	866.1	870.6	875.1	879.7	884.2	891.0	900.0	909.0	918.1	927.1	933.2
122.5°	921.4	925.9	930.5	934.9	939.5	946.3	955.5	964.7	973.9	983.2	988.0
125°	1005.2	1008.9	1012.4	1015.9	1019.6	1025.5	1034.0	1042.5	1051.0	1059.4	1064.1
127.5°	1081.6	1085.4	1089.2	1093.2	1097.0	1102.2	1108.7	1115.2	1121.8	1128.3	1133.6
130°	1130.0	1134.3	1138.6	1142.9	1147.2	1151.9	1157.1	1162.3	1167.4	1172.6	1178.0
132.5°	1179.4	1183.1	1186.7	1190.3	1194.0	1198.1	1202.7	1207.4	1212.1	1216.8	1221.7
135°	1243.2	1247.6	1252.0	1256.4	1260.8	1264.8	1268.2	1271.7	1275.2	1278.7	1283.5
137.5°	1308.2	1311.2	1314.2	1317.4	1320.4	1323.5	1326.8	1330.0	1333.3	1336.6	1341.1
140°	1350.7	1352.8	1354.8	1357.0	1359.1	1361.7	1364.9	1368.2	1371.4	1374.6	1378.7
142.5°	1386.2	1388.2	1390.0	1391.9	1393.7	1396.4	1400.0	1403.4	1406.9	1410.5	1414.0
145°	1441.6	1441.4	1441.1	1440.8	1440.6	1442.7	1447.4	1452.1	1456.7	1461.4	1463.9
147.5°	1490.3	1489.2	1488.2	1487.1	1486.1	1487.9	1492.5	1497.1	1501.8	1506.3	1507.8
150°	1522.0	1520.0	1518.1	1516.1	1514.2	1515.5	1519.8	1524.3	1528.6	1533.1	1534.7
152.5°	1548.6	1546.5	1544.3	1542.2	1540.0	1541.1	1545.2	1549.4	1553.6	1557.7	1559.4
155°	1587.4	1584.9	1582.5	1579.9	1577.5	1577.9	1581.2	1584.5	1587.8	1591.1	1592.8
157.5°	1617.8	1615.7	1613.6	1611.5	1609.4	1609.5	1611.8	1614.2	1616.5	1618.8	1620.6
160°	1635.6	1634.0	1632.2	1630.6	1629.0	1629.0	1630.6	1632.2	1634.0	1635.6	1637.2
162.5°	1651.4	1649.7	1648.1	1646.5	1644.8	1644.7	1646.1	1647.5	1649.0	1650.4	1652.2
165°	1672.6	1671.0	1669.3	1667.7	1666.1	1665.7	1666.5	1667.3	1668.1	1668.9	1670.8
167.5°	1688.5	1686.8	1685.2	1683.5	1681.8	1681.4	1682.2	1682.9	1683.7	1684.5	1686.4
170°	1697.4	1695.7	1694.0	1692.4	1690.7	1690.2	1690.7	1691.3	1691.8	1692.4	1694.4
172.5°	1703.2	1701.6	1700.0	1698.3	1696.7	1696.2	1696.7	1697.2	1697.8	1698.3	1700.2
175°	1710.9	1709.0	1707.1	1705.2	1703.2	1702.5	1703.1	1703.6	1704.2	1704.8	1706.7
177.5°	1712.1	1710.6	1709.1	1707.6	1706.0	1705.4	1705.6	1705.8	1706.0	1706.3	1707.8
180°	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6
2.5°	315.5	315.9	316.3	316.5	316.3	316.1	316.0	315.8
5°	314.6	315.2	315.8	316.0	315.9	315.8	315.7	315.6
7.5°	313.1	313.8	314.6	314.9	314.8	314.7	314.6	314.5
10°	311.7	312.6	313.4	313.8	313.7	313.6	313.5	313.4
12.5°	309.5	310.3	311.1	311.5	311.4	311.3	311.2	311.1
15°	305.5	306.5	307.4	307.8	307.7	307.6	307.5	307.4
17.5°	300.4	301.3	302.3	302.8	302.8	302.8	302.8	302.8
20°	296.3	297.4	298.5	299.1	299.1	299.1	299.1	299.1
22.5°	292.0	293.1	294.2	294.8	295.0	295.1	295.3	295.5
25°	285.1	286.3	287.5	288.2	288.5	288.8	289.1	289.4
27.5°	277.4	279.0	280.5	281.4	281.7	281.9	282.1	282.4
30°	272.1	273.8	275.4	276.3	276.6	276.9	277.2	277.5
32.5°	266.3	268.2	270.1	271.4	271.9	272.5	273.0	273.5
35°	258.2	260.4	262.7	264.2	264.9	265.6	266.3	267.0
37.5°	249.7	252.3	254.8	256.4	257.1	257.9	258.6	259.3
40°	243.9	246.5	249.1	251.0	251.9	252.8	253.7	254.6
42.5°	238.1	241.0	243.9	245.8	246.7	247.6	248.5	249.4
45°	229.2	232.5	235.6	237.7	238.7	239.7	240.8	241.8
47.5°	220.2	223.4	226.7	228.9	230.0	231.2	232.3	233.4
50°	213.8	217.3	220.8	223.1	224.2	225.3	226.4	227.5
52.5°	207.0	210.6	214.1	216.5	217.7	218.9	220.2	221.3
55°	196.8	200.5	204.2	206.6	207.9	209.3	210.7	212.0
57.5°	186.0	190.0	193.9	196.5	197.9	199.2	200.6	202.0
60°	178.8	182.8	186.6	189.2	190.7	192.1	193.6	195.0
62.5°	171.3	175.4	179.6	182.3	183.6	184.9	186.3	187.6
65°	159.8	163.9	168.1	170.9	172.2	173.5	174.8	176.1
67.5°	148.0	152.3	156.5	159.4	160.7	162.1	163.5	164.9
70°	140.0	144.3	148.8	151.6	152.8	154.0	155.2	156.4
72.5°	132.1	136.4	140.7	143.6	145.0	146.5	148.0	149.5
75°	120.3	124.6	129.1	131.9	133.2	134.5	135.8	137.1
77.5°	108.7	113.0	117.3	120.3	121.7	123.1	124.5	125.9
80°	100.8	105.0	109.4	112.2	113.6	115.0	116.4	117.9
82.5°	93.4	97.8	102.0	104.8	106.1	107.6	108.9	110.2
85°	82.9	87.2	91.5	94.3	95.7	97.1	98.6	100.0
87.5°	79.5	83.9	88.4	91.3	92.7	94.1	95.5	96.9
90°	96.1	101.6	107.0	110.7	112.4	114.2	116.0	117.8
92.5°	95.3	100.1	104.7	107.9	109.5	111.0	112.5	114.1
95°	111.4	116.6	121.9	125.0	125.9	126.9	127.8	128.9
97.5°	123.0	127.9	132.8	135.9	137.5	139.1	140.6	142.1
100°	128.3	134.2	140.2	144.0	145.6	147.3	149.0	150.7
102.5°	128.8	135.3	141.9	146.1	147.9	149.9	151.8	153.7
105°	127.9	134.6	141.2	145.5	147.7	150.0	152.2	154.4
107.5°	141.9	142.3	142.6	143.9	146.1	148.3	150.6	152.8
110°	201.3	177.1	152.9	141.9	144.1	146.3	148.6	150.8



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CATALOG NUMBER: S122DIW-S290D1240U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	382.4	285.6	188.6	141.2	143.2	145.2	147.2	149.3
115°	541.6	417.6	293.6	222.2	203.6	184.9	166.3	147.6
117.5°	812.5	784.8	757.1	711.2	647.3	583.4	519.5	455.7
120°	939.4	945.5	951.7	936.8	900.8	864.8	828.9	793.0
122.5°	992.7	997.4	1002.2	1001.4	995.2	989.0	982.7	976.4
125°	1068.8	1073.5	1078.1	1081.4	1083.1	1084.8	1086.6	1088.3
127.5°	1138.9	1144.3	1149.6	1152.8	1153.9	1154.9	1156.0	1157.0
130°	1183.5	1188.9	1194.4	1197.4	1197.9	1198.5	1199.0	1199.6
132.5°	1226.7	1231.6	1236.6	1239.3	1239.8	1240.4	1240.9	1241.4
135°	1288.5	1293.3	1298.2	1300.8	1301.0	1301.3	1301.6	1301.8
137.5°	1345.6	1350.2	1354.8	1357.0	1356.8	1356.5	1356.2	1356.0
140°	1382.8	1386.9	1391.0	1392.7	1391.9	1391.2	1390.4	1389.7
142.5°	1417.5	1421.1	1424.6	1426.0	1425.1	1424.3	1423.5	1422.6
145°	1466.4	1468.9	1471.6	1472.4	1471.5	1470.7	1469.8	1468.9
147.5°	1509.3	1510.9	1512.4	1512.7	1511.8	1510.9	1510.0	1509.0
150°	1536.3	1538.0	1539.6	1539.7	1538.4	1537.0	1535.6	1534.3
152.5°	1561.0	1562.7	1564.4	1564.3	1562.5	1560.6	1558.8	1557.0
155°	1594.4	1596.1	1597.7	1597.4	1595.2	1593.1	1590.8	1588.6
157.5°	1622.6	1624.4	1626.3	1626.1	1624.0	1621.8	1619.7	1617.5
160°	1638.9	1640.5	1642.1	1642.0	1640.1	1638.2	1636.3	1634.4
162.5°	1654.2	1656.0	1657.9	1657.6	1655.3	1652.8	1650.5	1648.2
165°	1672.7	1674.7	1676.6	1676.6	1674.7	1672.7	1670.8	1668.9
167.5°	1688.3	1690.2	1692.1	1691.9	1689.4	1687.0	1684.5	1682.0
170°	1696.3	1698.2	1700.1	1699.8	1697.4	1694.9	1692.4	1689.9
172.5°	1702.1	1704.0	1706.0	1705.8	1703.2	1700.8	1698.3	1695.9
175°	1708.6	1710.5	1712.4	1712.0	1709.3	1706.6	1703.7	1701.0
177.5°	1709.3	1710.8	1712.4	1712.1	1710.2	1708.2	1706.3	1704.2
180°	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2

(END OF REPORT)