

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: P332738-840

Luminaire Tested: **S124DIW-S350D1340U840-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332738-840  
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-S350D1340U840-4F0-1E-UDD-F1  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6234.1 lumens  
Efficiency: N/A  
Efficacy: 133.8 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-Indirect

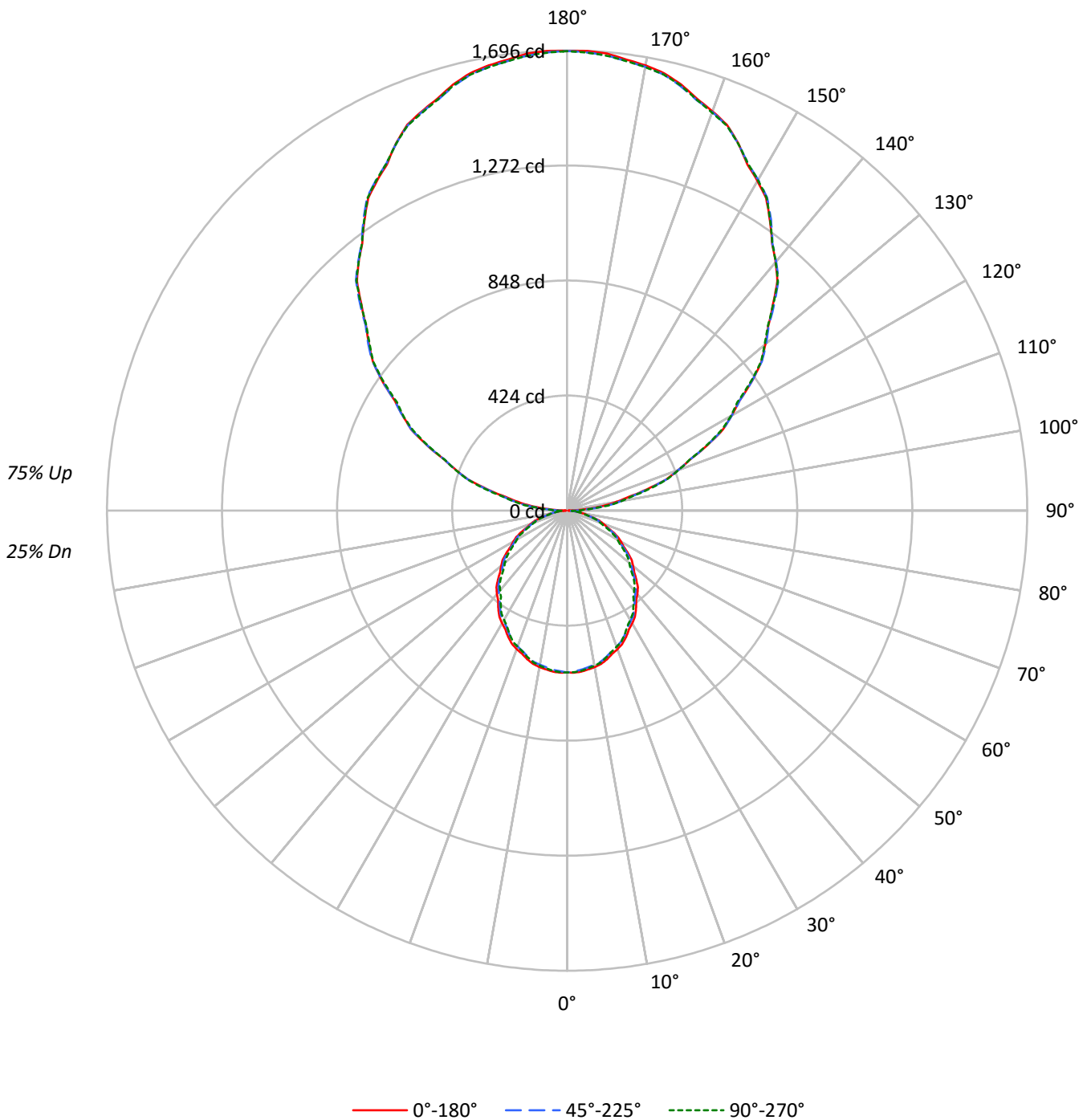
Input Watts (W): 46.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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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	101	101	101	101	90	90	90	90	69	69	69	50	50	50	33	33	33	25
1	92	88	84	81	82	78	75	72	60	58	57	44	43	42	29	28	28	21
2	84	77	71	66	74	68	63	59	53	50	47	39	37	35	25	24	23	17
3	76	67	60	55	68	60	54	49	47	43	39	34	31	29	22	21	20	15
4	70	59	52	46	62	53	47	42	41	37	33	30	27	25	20	18	17	13
5	64	53	45	39	57	47	41	36	37	32	29	27	24	22	18	16	15	11
6	59	47	39	34	52	42	36	31	33	28	25	24	21	19	16	14	13	10
7	54	42	35	29	48	38	32	27	30	25	22	22	19	16	15	13	11	9
8	50	38	31	26	45	34	28	24	27	22	19	20	17	15	14	12	10	8
9	47	35	28	23	41	31	25	21	25	20	17	18	15	13	13	11	9	7
10	43	32	25	20	39	29	23	19	23	18	15	17	14	12	12	10	8	6

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

	0°	45°	90°
0°	4816	4816	4816
5°	4830	4772	4807
10°	4800	4733	4757
15°	4741	4667	4679
20°	4665	4582	4587
25°	4577	4488	4475
30°	4470	4376	4336
35°	4357	4258	4202
40°	4241	4126	4051
45°	4120	3995	3919
50°	3986	3878	3758
55°	3842	3727	3606
60°	3696	3559	3450
65°	3534	3396	3261
70°	3352	3182	3059
75°	3072	2923	2848
80°	2734	2627	2552
85°	2399	2297	2251



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	56.2	0.9
10°-20°	158.3	2.5
20°-30°	233.0	3.7
30°-40°	270.8	4.3
40°-50°	270.9	4.3
50°-60°	236.9	3.8
60°-70°	175.9	2.8
70°-80°	100.0	1.6
80°-90°	33.9	0.5
90°-100°	111.7	1.8
100°-110°	330.9	5.3
110°-120°	561.6	9.0
120°-130°	740.5	11.9
130°-140°	831.6	13.3
140°-150°	817.2	13.1
150°-160°	687.3	11.0
160°-170°	457.3	7.3
170°-180°	160.1	2.6
0°-30°	447.4	7.2
0°-40°	718.3	11.5
0°-60°	1226.1	19.7
0°-90°	1535.9	24.6
90°-120°	1004.2	16.1
90°-150°	3393.5	54.4
90°-180°	4698.0	75.4
0°-180°	6234.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	596	596	596	596	596	
5°	596	594	589	594	593	57
15°	567	565	558	561	560	160
25°	514	510	504	504	502	236
35°	442	439	432	429	426	276
45°	361	357	350	345	343	278
55°	273	271	265	259	256	244
65°	185	182	178	173	171	183
75°	98	96	94	92	91	105
85°	26	26	25	25	24	29
90°	4	18	29	36	39	6
95°	79	90	100	103	104	87
105°	305	307	312	316	320	324
115°	571	571	568	567	566	563
125°	832	832	830	828	825	741
135°	1073	1080	1080	1078	1074	830
145°	1303	1308	1310	1308	1304	815
155°	1493	1493	1492	1496	1492	687
165°	1625	1621	1619	1626	1621	458
175°	1691	1685	1683	1691	1683	160
180°	1693	1693	1693	1693	1693	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5
2.5°	598.0	597.8	597.5	597.3	597.0	596.4	595.5	594.6	593.7	592.7	593.6
5°	596.0	595.6	595.2	594.8	594.4	593.6	592.4	591.3	590.1	588.9	590.1
7.5°	590.6	590.1	589.7	589.3	588.9	587.9	586.6	585.4	584.1	582.8	583.7
10°	585.5	585.1	584.7	584.3	583.9	583.0	581.6	580.2	578.9	577.4	578.2
12.5°	579.1	578.7	578.2	577.7	577.3	576.4	574.9	573.5	572.0	570.6	571.5
15°	567.3	566.9	566.5	566.1	565.7	564.7	563.1	561.5	559.9	558.4	559.0
17.5°	553.3	552.8	552.3	551.8	551.2	550.2	548.7	547.1	545.6	544.1	544.5
20°	543.0	542.5	542.0	541.4	540.9	539.9	538.3	536.6	535.0	533.4	533.8
22.5°	531.9	531.2	530.5	529.8	529.1	528.0	526.3	524.8	523.2	521.6	522.2
25°	513.8	513.1	512.4	511.6	510.9	509.8	508.3	506.8	505.3	503.8	503.9
27.5°	493.2	492.4	491.7	490.9	490.2	489.1	487.7	486.4	484.9	483.5	483.3
30°	479.5	478.6	477.8	476.9	476.1	474.9	473.5	472.1	470.8	469.4	469.0
32.5°	464.9	464.1	463.3	462.6	461.8	460.7	459.3	457.8	456.4	454.8	454.3
35°	442.1	441.4	440.7	439.9	439.2	438.1	436.6	435.0	433.6	432.1	431.4
37.5°	418.2	417.5	416.8	416.2	415.5	414.3	412.7	411.1	409.5	407.9	407.1
40°	402.4	401.6	400.8	399.9	399.1	397.9	396.3	394.7	393.0	391.5	390.4
42.5°	385.7	385.2	384.7	384.2	383.6	382.4	380.7	378.9	377.2	375.5	374.2
45°	360.9	360.1	359.4	358.7	357.9	356.7	355.0	353.3	351.6	349.9	348.7
47.5°	335.0	334.5	334.0	333.5	333.0	331.9	330.3	328.7	327.2	325.6	324.3
50°	317.4	317.0	316.6	316.1	315.7	314.8	313.3	311.7	310.2	308.8	307.3
52.5°	300.2	299.6	299.1	298.6	298.1	297.1	295.5	294.0	292.4	290.8	289.5
55°	273.0	272.7	272.3	272.0	271.7	270.7	269.2	267.8	266.3	264.8	263.6
57.5°	246.9	246.6	246.2	245.9	245.5	244.6	243.1	241.7	240.1	238.7	237.5
60°	228.9	228.4	227.9	227.3	226.8	225.9	224.5	223.1	221.8	220.4	219.4
62.5°	211.4	211.0	210.5	210.1	209.5	208.6	207.1	205.7	204.2	202.8	201.9
65°	185.0	184.5	183.9	183.4	182.9	182.1	181.0	180.0	178.8	177.8	176.7
67.5°	158.4	157.9	157.4	156.9	156.4	155.7	154.7	153.7	152.7	151.6	150.6
70°	142.0	141.2	140.5	139.8	139.0	138.1	137.3	136.5	135.6	134.8	133.9
72.5°	124.4	123.6	122.9	122.2	121.4	120.7	120.0	119.4	118.7	118.0	117.2
75°	98.5	98.0	97.5	96.8	96.3	95.8	95.3	94.7	94.2	93.7	93.3
77.5°	73.7	73.5	73.2	73.0	72.8	72.4	72.0	71.5	71.0	70.6	70.4
80°	58.8	58.5	58.2	57.9	57.6	57.3	57.1	56.9	56.7	56.5	56.1
82.5°	44.2	44.1	43.9	43.8	43.6	43.5	43.5	43.5	43.4	43.4	43.3
85°	25.9	25.9	25.9	25.9	25.9	25.8	25.4	25.2	25.0	24.8	24.8
87.5°	10.7	11.3	11.8	12.4	12.9	13.4	13.8	14.1	14.5	14.9	15.2
90°	3.9	7.2	10.3	13.5	16.8	19.5	21.8	24.1	26.5	28.8	30.6
92.5°	28.1	31.7	35.3	39.0	42.7	45.3	47.0	48.6	50.2	51.9	52.9
95°	78.6	81.2	83.8	86.4	89.1	91.4	93.4	95.4	97.5	99.6	100.4
97.5°	137.2	139.4	141.5	143.5	145.6	147.8	150.3	152.7	155.0	157.4	158.4
100°	183.4	184.5	185.7	186.8	188.0	189.9	192.5	195.1	197.7	200.4	201.0
102.5°	231.6	232.1	232.5	233.0	233.4	234.8	237.2	239.6	242.0	244.4	245.2
105°	305.2	305.5	305.8	306.0	306.3	307.0	308.2	309.4	310.5	311.7	312.6
107.5°	382.4	382.7	383.1	383.4	383.8	384.1	384.3	384.5	384.7	384.8	385.6
110°	434.8	435.4	436.0	436.6	437.2	437.3	437.0	436.7	436.5	436.2	435.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	489.3	489.4	489.5	489.7	489.8	489.6	489.1	488.5	488.0	487.5	487.4
115°	571.0	571.0	571.0	571.0	571.0	570.8	570.2	569.6	569.0	568.4	568.2
117.5°	648.0	648.2	648.5	648.7	648.9	648.8	648.4	648.0	647.6	647.2	646.2
120°	699.3	700.5	701.7	702.9	704.0	704.2	703.3	702.5	701.6	700.6	699.2
122.5°	752.8	753.3	753.8	754.2	754.7	754.7	754.3	753.9	753.5	753.1	752.0
125°	831.6	831.6	831.6	831.6	831.6	831.5	831.2	830.9	830.6	830.3	829.7
127.5°	903.1	904.0	904.9	905.7	906.7	906.9	906.4	905.9	905.4	904.9	904.4
130°	953.4	954.3	955.2	956.0	956.9	957.4	957.4	957.4	957.4	957.4	956.7
132.5°	1004.8	1005.4	1006.0	1006.7	1007.3	1007.5	1007.3	1007.0	1006.8	1006.6	1006.0
135°	1072.6	1074.4	1076.1	1077.8	1079.6	1080.5	1080.5	1080.5	1080.5	1080.5	1079.9
137.5°	1146.5	1147.3	1148.1	1148.9	1149.7	1150.4	1150.8	1151.3	1151.8	1152.3	1151.4
140°	1195.8	1196.3	1196.9	1197.5	1198.1	1198.3	1198.3	1198.3	1198.3	1198.3	1198.1
142.5°	1240.8	1241.3	1241.9	1242.5	1243.1	1243.2	1243.0	1242.8	1242.6	1242.3	1242.3
145°	1303.1	1304.3	1305.5	1306.7	1307.8	1308.5	1308.8	1309.1	1309.4	1309.7	1309.4
147.5°	1364.9	1366.3	1367.8	1369.2	1370.5	1371.1	1370.9	1370.7	1370.4	1370.2	1370.0
150°	1402.7	1403.8	1405.0	1406.1	1407.3	1407.9	1407.9	1407.9	1407.9	1407.9	1407.9
152.5°	1438.2	1439.0	1439.7	1440.4	1441.1	1441.6	1441.8	1442.0	1442.3	1442.5	1443.2
155°	1493.0	1493.0	1493.0	1493.0	1493.0	1492.9	1492.6	1492.3	1492.0	1491.8	1492.9
157.5°	1539.1	1538.6	1538.1	1537.5	1537.0	1536.7	1536.7	1536.6	1536.6	1536.5	1537.4
160°	1566.4	1566.1	1565.8	1565.5	1565.2	1564.9	1564.6	1564.4	1564.1	1563.8	1564.6
162.5°	1591.5	1590.7	1590.0	1589.2	1588.5	1588.0	1587.7	1587.4	1587.1	1586.8	1588.4
165°	1625.3	1624.5	1623.6	1622.7	1621.8	1621.1	1620.5	1619.9	1619.3	1618.7	1620.5
167.5°	1651.2	1650.0	1648.8	1647.6	1646.4	1645.8	1645.9	1645.9	1646.0	1646.0	1647.8
170°	1665.9	1664.5	1663.0	1661.5	1660.1	1659.5	1659.8	1660.1	1660.4	1660.6	1662.4
172.5°	1676.4	1675.2	1674.0	1672.7	1671.5	1670.9	1671.0	1671.0	1671.1	1671.1	1673.1
175°	1690.8	1689.3	1687.9	1686.5	1685.0	1684.1	1683.8	1683.5	1683.2	1682.9	1685.0
177.5°	1695.5	1694.4	1693.1	1692.0	1690.8	1690.3	1690.3	1690.3	1690.3	1690.3	1691.9
180°	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5
2.5°	594.4	595.3	596.1	596.5	596.4	596.3	596.2	596.1
5°	591.3	592.4	593.6	594.0	593.8	593.6	593.4	593.2
7.5°	584.6	585.6	586.5	586.9	586.8	586.6	586.5	586.4
10°	579.2	580.0	580.9	581.2	581.0	580.7	580.5	580.3
12.5°	572.4	573.3	574.3	574.6	574.3	574.0	573.7	573.4
15°	559.6	560.2	560.9	561.0	560.7	560.4	560.1	559.8
17.5°	544.9	545.3	545.7	545.8	545.6	545.4	545.2	545.0
20°	534.1	534.4	534.7	534.8	534.5	534.3	534.1	533.9
22.5°	522.7	523.3	523.9	524.0	523.6	523.2	522.8	522.5
25°	504.0	504.1	504.2	504.1	503.6	503.2	502.8	502.4
27.5°	483.0	482.8	482.5	482.1	481.6	481.1	480.5	480.0
30°	468.6	468.2	467.7	467.3	466.7	466.2	465.6	465.1
32.5°	453.8	453.3	452.8	452.3	451.8	451.2	450.7	450.2
35°	430.6	429.9	429.1	428.5	428.0	427.5	426.9	426.4
37.5°	406.3	405.5	404.7	403.9	403.2	402.5	401.8	401.1
40°	389.4	388.3	387.3	386.5	385.9	385.4	384.9	384.4
42.5°	372.9	371.7	370.5	369.7	369.3	369.0	368.6	368.3
45°	347.6	346.4	345.3	344.5	344.2	343.9	343.6	343.3
47.5°	323.0	321.6	320.3	319.3	318.5	317.7	316.9	316.1
50°	305.8	304.4	302.9	301.7	301.1	300.5	299.8	299.2
52.5°	288.2	286.9	285.6	284.5	283.7	282.9	282.1	281.2
55°	262.3	260.9	259.7	258.7	258.1	257.5	256.8	256.2
57.5°	236.3	235.1	233.9	233.0	232.4	231.8	231.2	230.5
60°	218.4	217.5	216.5	215.8	215.3	214.7	214.2	213.7
62.5°	201.1	200.2	199.2	198.5	198.0	197.5	197.0	196.4
65°	175.7	174.6	173.6	172.8	172.3	171.7	171.2	170.7
67.5°	149.6	148.6	147.5	146.9	146.8	146.6	146.5	146.3
70°	133.1	132.3	131.4	130.8	130.5	130.2	129.9	129.6
72.5°	116.6	115.9	115.2	114.7	114.4	114.1	113.8	113.5
75°	92.8	92.4	92.0	91.7	91.6	91.5	91.4	91.3
77.5°	70.3	70.2	70.1	69.9	69.6	69.3	69.0	68.8
80°	55.9	55.7	55.5	55.4	55.2	55.1	55.0	54.9
82.5°	43.1	43.0	42.9	42.8	42.7	42.5	42.4	42.3
85°	24.8	24.8	24.8	24.8	24.7	24.6	24.4	24.3
87.5°	15.7	16.0	16.4	16.6	16.7	16.8	17.0	17.1
90°	32.3	34.0	35.7	37.0	37.6	38.2	38.7	39.3
92.5°	53.9	55.0	56.0	56.8	57.1	57.5	57.8	58.2
95°	101.3	102.2	103.0	103.5	103.5	103.5	103.5	103.5
97.5°	159.6	160.6	161.6	162.2	162.2	162.2	162.2	162.2
100°	201.6	202.2	202.7	203.0	203.0	203.0	203.0	203.0
102.5°	246.0	246.8	247.6	248.1	248.4	248.6	248.8	249.1
105°	313.5	314.4	315.2	316.1	316.9	317.8	318.7	319.5
107.5°	386.4	387.2	388.1	388.4	388.4	388.3	388.3	388.2
110°	434.9	434.3	433.8	433.9	434.8	435.7	436.6	437.5





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CATALOG NUMBER: S124DIW-S350D1340U840-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	487.3	487.2	487.0	487.1	487.2	487.4	487.6	487.8
115°	567.8	567.5	567.2	566.9	566.6	566.3	566.0	565.8
117.5°	645.3	644.3	643.3	642.5	641.9	641.4	640.8	640.2
120°	697.8	696.3	694.9	694.4	695.0	695.6	696.2	696.7
122.5°	751.0	750.1	749.1	748.1	747.0	746.0	745.0	743.9
125°	829.2	828.6	828.0	827.4	826.9	826.3	825.7	825.1
127.5°	903.8	903.2	902.6	902.1	901.7	901.2	900.7	900.3
130°	956.2	955.6	955.0	954.2	953.0	951.8	950.7	949.5
132.5°	1005.4	1004.9	1004.3	1003.8	1003.3	1002.8	1002.4	1001.9
135°	1079.3	1078.7	1078.1	1077.4	1076.5	1075.7	1074.8	1073.9
137.5°	1150.7	1150.0	1149.2	1148.9	1149.1	1149.3	1149.4	1149.6
140°	1197.8	1197.5	1197.2	1196.9	1196.6	1196.3	1196.0	1195.8
142.5°	1242.2	1242.2	1242.1	1242.0	1242.0	1241.9	1241.9	1241.8
145°	1309.1	1308.8	1308.5	1308.0	1307.1	1306.2	1305.4	1304.4
147.5°	1369.7	1369.5	1369.3	1369.0	1368.7	1368.4	1368.2	1367.9
150°	1407.9	1407.9	1407.9	1407.8	1407.4	1407.1	1406.8	1406.6
152.5°	1443.9	1444.6	1445.3	1445.2	1444.5	1443.7	1443.0	1442.2
155°	1494.1	1495.2	1496.4	1496.4	1495.2	1494.1	1492.9	1491.8
157.5°	1538.2	1539.1	1540.0	1539.9	1538.9	1537.9	1537.0	1536.0
160°	1565.5	1566.4	1567.2	1566.9	1565.5	1564.1	1562.6	1561.2
162.5°	1589.9	1591.5	1593.1	1593.2	1591.6	1590.2	1588.8	1587.3
165°	1622.2	1624.0	1625.8	1626.1	1624.9	1623.7	1622.6	1621.3
167.5°	1649.5	1651.2	1652.9	1652.9	1651.1	1649.3	1647.6	1645.8
170°	1664.2	1665.9	1667.7	1667.5	1665.5	1663.4	1661.4	1659.4
172.5°	1675.1	1677.1	1679.1	1679.0	1677.0	1675.0	1672.9	1670.9
175°	1687.0	1689.0	1691.1	1691.1	1689.0	1687.0	1685.0	1682.9
177.5°	1693.5	1695.2	1696.8	1696.7	1694.9	1692.9	1691.1	1689.2
180°	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4

(END OF REPORT)