

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: P332743-840

Luminaire Tested: **S124DIW-S350D1560U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332743-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S350D1560U840-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1560 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7835.1 lumens
Efficiency: N/A
Efficacy: 146.7 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

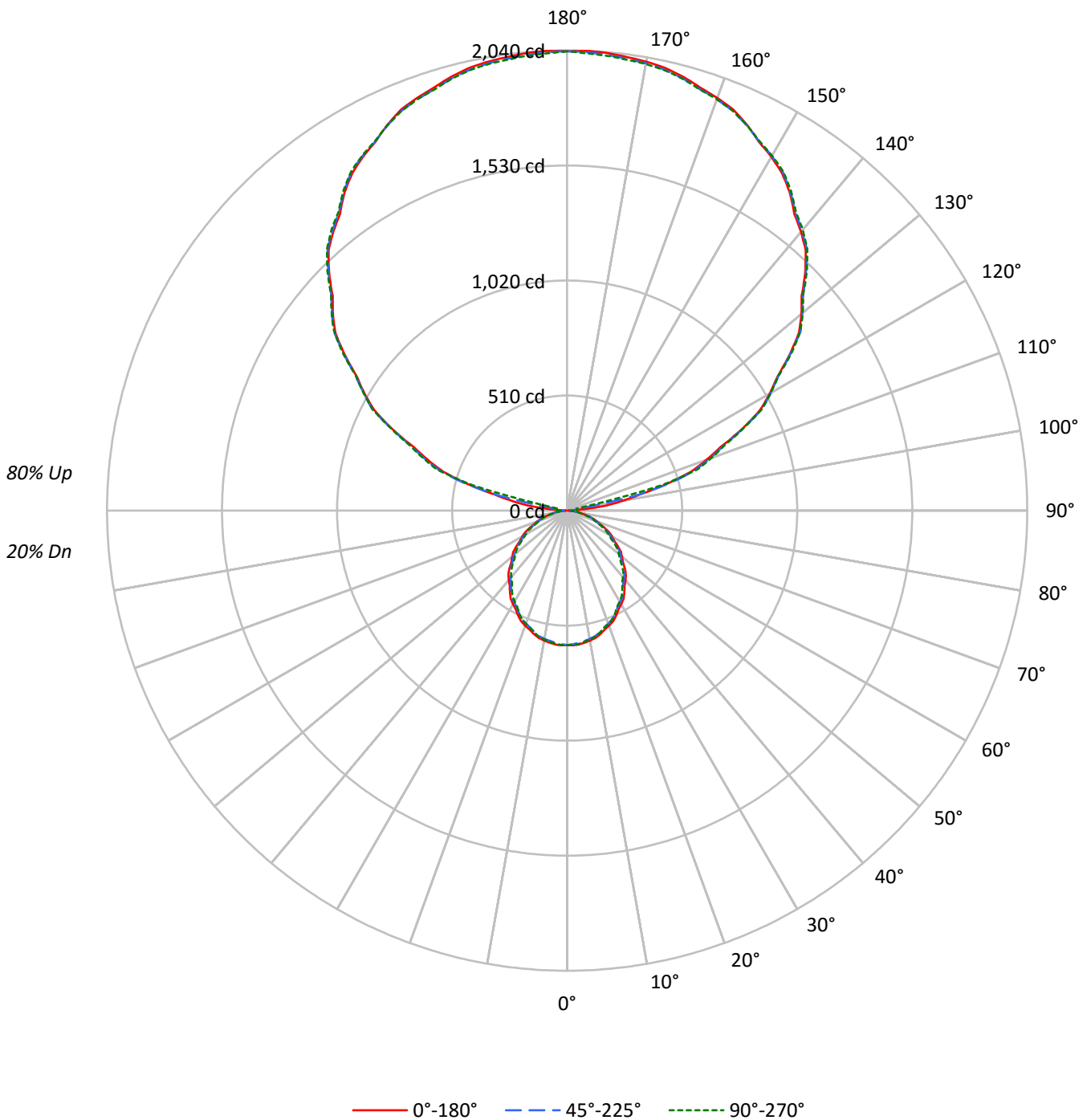
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	47	47	47	28	28	28	20
1	91	87	83	80	80	77	74	71	58	56	54	41	40	38	25	24	24	16
2	83	76	70	65	73	67	62	58	51	48	45	36	34	32	22	21	20	14
3	75	66	60	54	66	59	53	48	45	41	38	32	29	27	19	18	17	12
4	69	59	51	45	61	52	46	41	40	35	32	28	25	23	17	16	15	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	23	20	17	14	12	11	8
7	53	42	34	29	47	37	31	26	29	24	21	20	17	15	13	11	10	7
8	49	38	30	25	44	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°	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	0.7
10°-20°	158.3	2.0
20°-30°	233.0	3.0
30°-40°	270.8	3.5
40°-50°	270.9	3.5
50°-60°	236.9	3.0
60°-70°	175.9	2.2
70°-80°	100.0	1.3
80°-90°	34.7	0.4
90°-100°	69.6	0.9
100°-110°	444.0	5.7
110°-120°	849.4	10.8
120°-130°	1078.3	13.8
130°-140°	1153.7	14.7
140°-150°	1078.8	13.8
150°-160°	870.0	11.1
160°-170°	561.1	7.2
170°-180°	193.4	2.5
0°-30°	447.4	5.7
0°-40°	718.3	9.2
0°-60°	1226.1	15.6
0°-90°	1536.7	19.6
90°-120°	1363.1	17.4
90°-150°	4673.9	59.7
90°-180°	6298.0	80.4
0°-180°	7835.1	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	21	34	42	46	5
95°	84	35	34	42	44	108
105°	458	468	475	485	434	480
115°	856	860	859	862	862	842
125°	1203	1209	1206	1211	1212	1074
135°	1492	1491	1497	1500	1503	1149
145°	1721	1725	1726	1727	1730	1075
155°	1887	1888	1884	1889	1885	870
165°	1990	1983	1983	1994	1981	562
175°	2036	2028	2028	2040	2024	194
180°	2036	2036	2036	2036	2036	



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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°	10.9	11.5	12.2	12.8	13.5	14.0	14.5	14.9	15.5	15.9	16.3
90°	4.5	8.3	12.0	15.8	19.5	22.7	25.3	28.1	30.8	33.5	35.5
92.5°	19.2	19.4	19.6	19.8	20.0	21.4	24.1	26.9	29.6	32.3	34.3
95°	83.7	72.2	60.8	49.3	37.8	32.1	32.5	32.8	33.1	33.5	35.5
97.5°	177.8	185.0	192.2	199.4	206.6	191.3	153.5	115.7	78.0	40.2	40.4
100°	249.7	255.9	262.0	268.0	274.1	253.8	207.1	160.4	113.7	67.1	61.3
102.5°	330.1	334.7	339.1	343.6	348.0	347.2	341.1	335.1	328.9	322.9	260.7
105°	458.4	460.4	462.4	464.5	466.6	468.4	470.1	471.8	473.4	475.1	478.2
107.5°	577.4	578.6	579.6	580.6	581.6	583.2	585.5	587.8	590.1	592.4	593.9
110°	657.9	658.9	659.9	661.0	662.0	663.5	665.5	667.5	669.5	671.6	672.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	735.9	737.7	739.5	741.3	743.2	744.6	745.5	746.5	747.4	748.4	748.2
115°	855.9	856.9	857.9	858.9	859.9	860.3	859.9	859.6	859.3	858.9	859.6
117.5°	964.0	965.3	966.7	968.1	969.5	970.5	971.2	972.0	972.7	973.4	973.3
120°	1037.1	1038.4	1039.9	1041.2	1042.5	1043.0	1042.7	1042.4	1042.0	1041.7	1042.4
122.5°	1105.3	1106.1	1106.9	1107.7	1108.6	1109.2	1109.7	1110.1	1110.6	1111.2	1111.6
125°	1203.2	1204.5	1205.8	1207.2	1208.5	1208.8	1208.2	1207.5	1206.8	1206.2	1207.2
127.5°	1295.7	1296.1	1296.4	1296.7	1297.1	1298.0	1299.6	1301.1	1302.6	1304.2	1304.0
130°	1355.4	1355.7	1356.0	1356.5	1356.8	1357.5	1358.5	1359.5	1360.5	1361.5	1361.8
132.5°	1410.2	1410.8	1411.5	1412.1	1412.7	1413.6	1414.9	1416.1	1417.4	1418.8	1419.1
135°	1492.5	1492.1	1491.8	1491.5	1491.1	1491.6	1493.0	1494.3	1495.7	1497.0	1497.7
137.5°	1565.3	1565.4	1565.5	1565.7	1565.8	1566.6	1568.1	1569.6	1571.0	1572.6	1573.3
140°	1612.8	1613.5	1614.2	1614.8	1615.5	1616.2	1616.8	1617.5	1618.2	1618.8	1619.9
142.5°	1655.4	1656.6	1657.9	1659.1	1660.3	1661.1	1661.5	1661.9	1662.3	1662.7	1663.4
145°	1720.9	1721.9	1722.9	1723.9	1725.0	1725.5	1725.5	1725.5	1725.5	1725.5	1725.8
147.5°	1773.0	1774.8	1776.8	1778.7	1780.6	1781.3	1781.0	1780.7	1780.3	1780.0	1780.3
150°	1810.8	1812.1	1813.4	1814.8	1816.1	1816.6	1816.3	1816.0	1815.6	1815.3	1815.3
152.5°	1842.4	1843.5	1844.6	1845.6	1846.7	1847.0	1846.3	1845.7	1845.1	1844.5	1845.1
155°	1886.9	1887.2	1887.5	1887.9	1888.2	1887.9	1886.9	1885.9	1884.9	1883.8	1885.2
157.5°	1924.4	1924.2	1924.0	1923.8	1923.6	1922.9	1921.7	1920.6	1919.5	1918.2	1920.1
160°	1946.3	1945.3	1944.3	1943.3	1942.3	1941.6	1941.2	1940.9	1940.6	1940.2	1942.3
162.5°	1965.8	1964.5	1963.2	1962.0	1960.7	1959.8	1959.4	1959.1	1958.8	1958.4	1960.5
165°	1990.4	1988.7	1987.1	1985.4	1983.7	1982.9	1982.9	1982.9	1982.9	1982.9	1985.5
167.5°	2009.9	2008.2	2006.4	2004.7	2002.9	2002.0	2001.8	2001.6	2001.4	2001.1	2004.1
170°	2020.9	2018.9	2016.8	2014.8	2012.8	2012.0	2012.3	2012.7	2013.0	2013.3	2016.0
172.5°	2028.2	2026.2	2024.2	2022.2	2020.1	2019.2	2019.6	2019.9	2020.2	2020.6	2023.3
175°	2036.1	2034.1	2032.1	2030.0	2028.0	2027.2	2027.5	2027.8	2028.2	2028.5	2031.5
177.5°	2039.8	2037.9	2036.0	2034.1	2032.3	2031.5	2032.1	2032.7	2033.2	2033.7	2035.9
180°	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1



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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°	16.7	17.1	17.5	17.8	17.9	18.1	18.2	18.3
90°	37.6	39.6	41.6	43.0	43.6	44.3	45.0	45.6
92.5°	36.4	38.4	40.4	41.5	41.6	41.8	41.9	42.0
95°	37.6	39.6	41.6	42.8	43.1	43.5	43.8	44.1
97.5°	40.6	40.8	41.0	41.3	41.6	42.0	42.3	42.6
100°	55.5	49.8	44.0	41.3	41.6	42.0	42.3	42.6
102.5°	198.7	136.6	74.6	43.6	43.6	43.7	43.8	43.8
105°	481.2	484.3	487.4	482.7	470.6	458.4	446.3	434.0
107.5°	595.4	596.9	598.3	599.8	601.1	602.3	603.6	604.9
110°	673.0	673.7	674.3	675.2	676.2	677.2	678.2	679.2



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CATALOG NUMBER: S124DIW-S350D1560U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	748.1	747.9	747.8	748.4	749.7	750.9	752.2	753.6
115°	860.3	860.9	861.6	862.0	862.0	862.0	862.0	862.0
117.5°	973.2	973.0	972.9	972.8	972.6	972.5	972.4	972.2
120°	1043.0	1043.7	1044.4	1044.4	1043.7	1043.0	1042.4	1041.7
122.5°	1112.0	1112.4	1112.8	1112.6	1112.0	1111.3	1110.5	1109.9
125°	1208.2	1209.2	1210.2	1210.9	1211.2	1211.5	1211.9	1212.2
127.5°	1303.8	1303.6	1303.4	1303.1	1302.9	1302.6	1302.3	1302.1
130°	1362.2	1362.5	1362.8	1363.0	1363.0	1363.0	1363.0	1363.0
132.5°	1419.5	1419.8	1420.1	1420.2	1419.9	1419.6	1419.4	1419.1
135°	1498.3	1499.0	1499.8	1500.5	1501.1	1501.8	1502.5	1503.1
137.5°	1574.1	1574.8	1575.6	1575.8	1575.6	1575.4	1575.2	1575.0
140°	1620.9	1621.9	1623.0	1623.6	1624.0	1624.3	1624.6	1625.0
142.5°	1664.3	1665.0	1665.7	1666.1	1666.2	1666.3	1666.3	1666.4
145°	1726.2	1726.5	1726.8	1727.4	1728.0	1728.7	1729.4	1730.0
147.5°	1780.5	1780.8	1781.1	1781.4	1781.7	1782.0	1782.4	1782.7
150°	1815.3	1815.3	1815.3	1815.5	1815.8	1816.1	1816.5	1816.8
152.5°	1845.6	1846.1	1846.7	1846.8	1846.6	1846.4	1846.2	1846.0
155°	1886.5	1887.9	1889.3	1889.5	1888.4	1887.4	1886.4	1885.4
157.5°	1921.8	1923.6	1925.3	1925.3	1923.6	1921.8	1920.1	1918.2
160°	1944.3	1946.3	1948.3	1948.3	1946.3	1944.3	1942.3	1940.2
162.5°	1962.6	1964.6	1966.6	1966.4	1964.2	1961.9	1959.5	1957.2
165°	1988.2	1990.9	1993.7	1993.5	1990.4	1987.4	1984.4	1981.4
167.5°	2007.1	2010.0	2013.1	2012.9	2009.4	2006.1	2002.7	1999.3
170°	2018.7	2021.4	2024.2	2023.8	2020.4	2017.0	2013.7	2010.2
172.5°	2026.0	2028.7	2031.4	2030.9	2027.3	2023.7	2020.0	2016.3
175°	2034.6	2037.7	2040.7	2040.2	2036.1	2032.1	2028.0	2024.0
177.5°	2038.0	2040.2	2042.4	2041.8	2038.6	2035.3	2032.1	2028.8
180°	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1

(END OF REPORT)