

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: P332742-830

Luminaire Tested: **S124DIW-S350D1560U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332742-830
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-S350D1560U830-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6461.9 lumens
Efficiency: N/A
Efficacy: 121.0 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

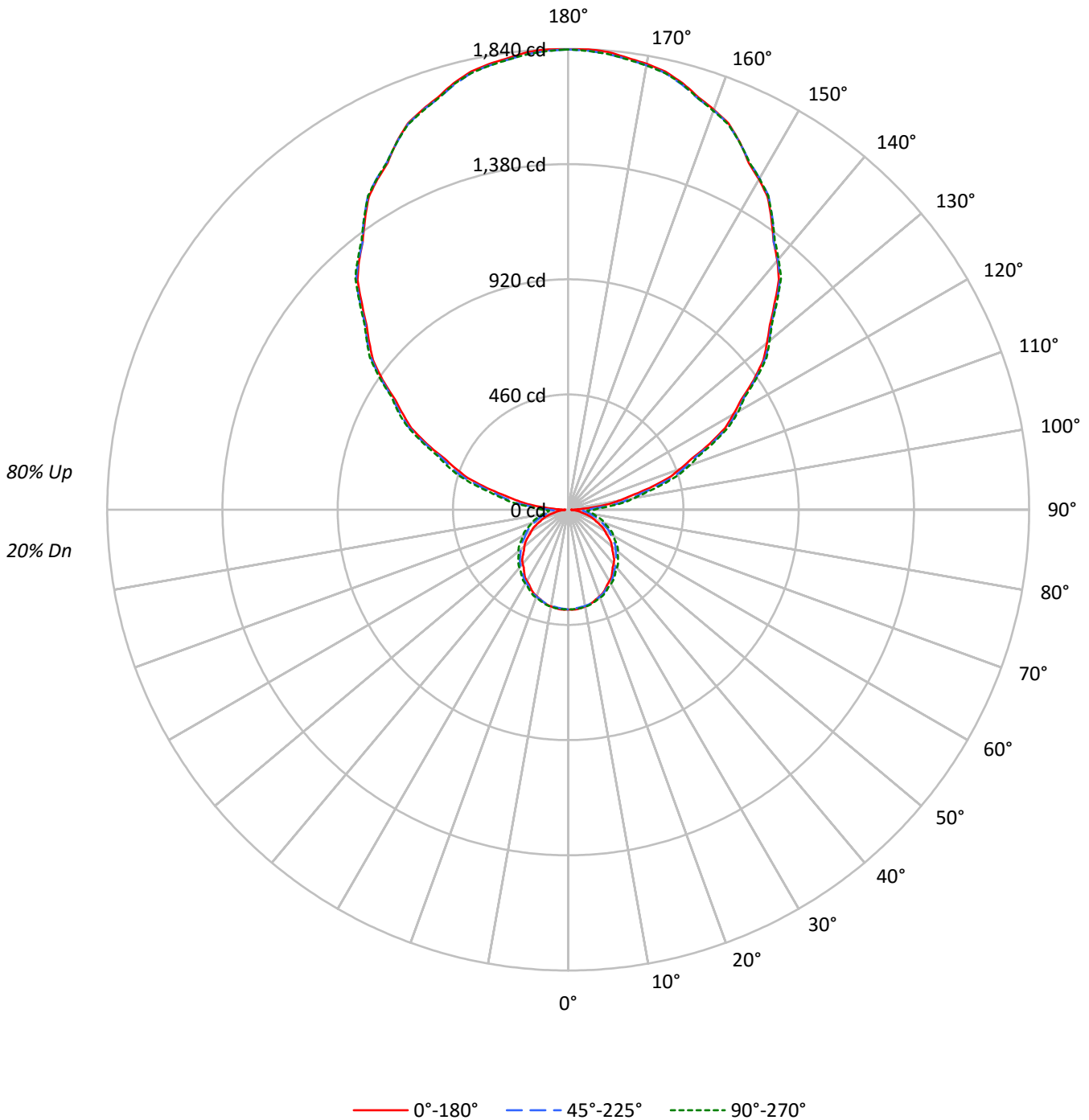
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	20
1	91	86	82	79	80	76	73	70	57	55	53	40	39	38	24	23	23	16
2	82	75	69	64	72	66	61	57	50	47	44	35	33	31	21	20	19	13
3	75	66	59	53	66	58	52	47	44	40	36	31	28	26	18	17	16	11
4	68	58	50	44	60	51	45	40	39	34	31	27	24	22	16	15	14	9
5	62	51	43	38	55	45	39	34	34	30	26	24	21	19	15	13	12	8
6	57	46	38	32	50	41	34	29	31	26	23	22	19	16	13	11	10	7
7	53	41	33	28	46	36	30	25	28	23	20	20	17	14	12	10	9	6
8	49	37	30	25	43	33	27	22	25	21	17	18	15	13	11	9	8	5
9	45	34	26	22	40	30	24	20	23	18	15	16	13	11	10	8	7	5
10	42	31	24	19	37	27	21	17	21	17	14	15	12	10	9	8	6	4

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3216	3216	3216
5°	3227	3143	3152
10°	3207	3092	3090
15°	3177	3032	3016
20°	3134	2967	2944
25°	3086	2893	2865
30°	3032	2819	2784
35°	2972	2744	2713
40°	2925	2674	2639
45°	2853	2607	2575
50°	2794	2532	2508
55°	2732	2460	2429
60°	2635	2369	2357
65°	2529	2272	2269
70°	2400	2161	2166
75°	2220	2037	2074
80°	2021	1919	1981
85°	1773	1815	1928



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.7	0.6
10°-20°	108.1	1.7
20°-30°	163.4	2.5
30°-40°	197.8	3.1
40°-50°	209.1	3.2
50°-60°	196.8	3.0
60°-70°	163.2	2.5
70°-80°	114.7	1.8
80°-90°	70.3	1.1
90°-100°	159.7	2.5
100°-110°	387.5	6.0
110°-120°	628.5	9.7
120°-130°	814.3	12.6
130°-140°	907.1	14.0
140°-150°	887.7	13.7
150°-160°	745.9	11.5
160°-170°	496.2	7.7
170°-180°	173.8	2.7
0°-30°	309.3	4.8
0°-40°	507.0	7.8
0°-60°	912.9	14.1
0°-90°	1261.1	19.5
90°-120°	1175.8	18.2
90°-150°	3785.0	58.6
90°-180°	5201.0	80.5
0°-180°	6461.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	398	398	398	398	398	
5°	399	397	394	398	398	38
15°	382	383	381	385	385	108
25°	350	352	354	358	359	161
35°	306	311	316	322	324	192
45°	255	264	272	279	282	197
55°	200	210	223	231	234	178
65°	138	153	168	178	182	137
75°	77	93	112	124	128	82
85°	24	42	62	75	80	25
90°	11	45	75	96	103	10
95°	91	119	147	162	167	99
105°	335	346	368	383	391	356
115°	622	627	638	646	648	614
125°	904	904	914	919	919	806
135°	1165	1173	1176	1180	1179	901
145°	1415	1420	1421	1422	1420	885
155°	1620	1620	1619	1624	1619	745
165°	1764	1760	1757	1764	1759	497
175°	1835	1828	1826	1835	1826	174
180°	1838	1838	1838	1838	1838	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
2.5°	399.8	399.5	399.4	399.1	398.9	398.4	397.8	397.2	396.5	395.9	396.4
5°	398.9	398.5	398.2	397.9	397.7	397.2	396.4	395.8	395.1	394.4	395.2
7.5°	395.5	395.3	395.1	394.9	394.7	394.4	393.8	393.2	392.7	392.1	392.9
10°	392.6	392.5	392.4	392.3	392.2	391.9	391.4	390.9	390.4	389.9	390.8
12.5°	388.7	388.6	388.6	388.6	388.6	388.4	388.0	387.8	387.4	387.1	387.9
15°	382.3	382.5	382.6	382.7	382.8	382.7	382.3	382.0	381.7	381.4	382.3
17.5°	373.7	374.0	374.3	374.6	374.8	375.0	374.9	374.8	374.8	374.8	375.7
20°	367.6	367.9	368.3	368.5	368.8	369.0	369.1	369.2	369.3	369.4	370.4
22.5°	360.8	361.2	361.6	361.9	362.3	362.6	362.8	363.0	363.2	363.4	364.3
25°	349.8	350.3	351.0	351.6	352.1	352.6	352.9	353.2	353.5	353.8	354.9
27.5°	337.4	338.4	339.2	340.1	340.9	341.6	342.0	342.5	343.0	343.5	344.4
30°	329.2	330.1	330.8	331.6	332.4	333.2	333.8	334.5	335.3	335.9	337.1
32.5°	320.4	321.3	322.3	323.2	324.1	325.0	325.7	326.5	327.3	328.1	329.3
35°	306.0	307.3	308.4	309.6	310.9	311.9	312.9	313.9	314.9	315.8	317.3
37.5°	291.7	293.0	294.5	295.8	297.2	298.4	299.7	301.0	302.2	303.4	304.8
40°	282.4	283.7	285.0	286.3	287.6	288.9	290.3	291.7	293.0	294.5	296.0
42.5°	271.7	273.1	274.6	276.1	277.5	279.0	280.7	282.3	283.9	285.5	287.2
45°	255.1	257.0	258.9	260.8	262.7	264.6	266.5	268.3	270.2	272.1	273.8
47.5°	239.4	241.4	243.3	245.2	247.1	249.2	251.4	253.6	255.8	258.0	259.7
50°	228.0	230.2	232.3	234.5	236.7	238.8	241.1	243.3	245.4	247.6	249.6
52.5°	216.6	218.8	220.9	223.1	225.3	227.6	230.1	232.6	235.1	237.6	239.6
55°	199.9	202.0	204.1	206.1	208.2	210.8	213.7	216.7	219.6	222.6	224.6
57.5°	181.3	183.8	186.3	189.0	191.5	194.3	197.3	200.2	203.1	206.1	208.5
60°	169.1	171.6	174.3	176.8	179.4	182.3	185.6	188.9	192.1	195.4	197.7
62.5°	157.3	160.1	163.0	165.8	168.5	171.6	174.8	178.1	181.4	184.7	187.0
65°	138.3	141.5	144.7	147.8	151.0	154.3	157.6	161.0	164.4	167.8	170.2
67.5°	120.0	123.4	126.8	130.2	133.5	137.0	140.6	144.2	147.8	151.4	153.9
70°	107.5	110.8	114.2	117.6	121.0	124.6	128.4	132.1	135.9	139.7	142.3
72.5°	95.4	98.9	102.3	105.8	109.1	112.9	116.9	120.9	124.9	128.9	131.5
75°	76.7	80.4	84.1	87.8	91.4	95.3	99.5	103.7	107.8	112.0	114.8
77.5°	59.4	63.2	67.1	71.0	74.8	79.0	83.3	87.8	92.1	96.4	99.2
80°	48.6	52.6	56.6	60.5	64.5	68.6	73.0	77.4	81.7	86.1	89.1
82.5°	37.9	42.0	46.2	50.3	54.4	58.6	63.1	67.4	71.7	76.2	79.2
85°	23.7	27.8	32.0	36.1	40.3	44.6	49.1	53.5	58.0	62.5	65.4
87.5°	14.0	18.8	23.6	28.3	33.0	37.8	42.7	47.5	52.3	57.2	60.4
90°	11.4	18.9	26.3	33.7	41.2	48.3	55.0	61.8	68.6	75.4	80.2
92.5°	37.2	44.8	52.3	59.9	67.4	74.2	80.2	86.2	92.3	98.3	102.3
95°	91.0	97.2	103.3	109.4	115.6	121.7	128.0	134.3	140.5	146.8	150.4
97.5°	154.2	159.3	164.4	169.5	174.6	180.4	187.0	193.7	200.3	206.9	210.6
100°	203.9	207.7	211.6	215.4	219.2	224.5	231.2	237.9	244.7	251.4	254.7
102.5°	256.2	258.9	261.7	264.5	267.2	271.8	278.1	284.6	291.0	297.3	300.8
105°	335.2	337.4	339.8	342.0	344.3	348.0	352.9	357.8	362.8	367.7	371.1
107.5°	419.0	420.9	422.9	424.9	427.0	429.8	433.4	437.1	440.7	444.4	447.7
110°	475.4	477.4	479.5	481.5	483.5	486.1	489.3	492.4	495.5	498.7	500.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	534.1	535.6	536.9	538.3	539.6	541.7	544.4	547.1	549.9	552.6	554.7
115°	622.4	623.2	624.2	625.0	625.8	627.6	630.2	632.7	635.3	637.7	639.6
117.5°	705.8	706.6	707.4	708.1	709.0	710.6	713.1	715.6	718.1	720.7	721.6
120°	761.2	762.7	764.3	765.8	767.4	769.1	771.1	773.0	775.0	776.8	777.2
122.5°	819.2	819.7	820.3	820.9	821.4	822.8	825.1	827.4	829.6	831.9	832.8
125°	904.3	904.2	904.1	904.0	903.8	904.8	907.0	909.2	911.3	913.5	914.8
127.5°	981.8	982.6	983.4	984.3	985.1	986.3	987.7	989.1	990.4	991.8	993.1
130°	1035.9	1036.8	1037.6	1038.5	1039.3	1040.6	1042.2	1043.8	1045.4	1046.9	1048.1
132.5°	1091.7	1092.3	1092.9	1093.4	1094.1	1094.9	1095.9	1096.9	1098.0	1098.9	1100.0
135°	1164.9	1166.8	1168.7	1170.5	1172.4	1173.7	1174.4	1175.2	1175.8	1176.5	1177.4
137.5°	1245.0	1245.8	1246.6	1247.4	1248.1	1249.0	1249.8	1250.7	1251.5	1252.4	1252.9
140°	1298.4	1299.0	1299.5	1300.0	1300.6	1300.9	1301.0	1301.1	1301.2	1301.3	1302.3
142.5°	1347.0	1347.6	1348.2	1348.8	1349.4	1349.5	1349.2	1349.0	1348.7	1348.3	1349.4
145°	1414.6	1415.7	1416.8	1418.1	1419.2	1419.9	1420.2	1420.6	1420.9	1421.2	1421.4
147.5°	1481.6	1483.0	1484.4	1485.9	1487.3	1487.9	1487.6	1487.3	1487.1	1486.9	1486.7
150°	1522.6	1523.7	1524.8	1526.1	1527.2	1527.8	1527.8	1527.8	1527.8	1527.8	1527.8
152.5°	1560.9	1561.6	1562.4	1563.1	1563.8	1564.3	1564.5	1564.8	1565.1	1565.3	1566.0
155°	1620.1	1620.1	1620.1	1620.1	1620.1	1620.0	1619.7	1619.4	1619.1	1618.7	1620.0
157.5°	1670.2	1669.6	1669.1	1668.5	1667.9	1667.6	1667.5	1667.5	1667.5	1667.4	1668.3
160°	1699.8	1699.4	1699.1	1698.8	1698.5	1698.2	1697.9	1697.5	1697.2	1697.0	1697.9
162.5°	1727.0	1726.3	1725.4	1724.6	1723.7	1723.2	1722.9	1722.6	1722.2	1721.9	1723.6
165°	1763.7	1762.7	1761.8	1760.9	1759.9	1759.2	1758.5	1757.8	1757.3	1756.6	1758.5
167.5°	1791.9	1790.5	1789.2	1787.9	1786.6	1785.9	1786.0	1786.0	1786.1	1786.2	1788.1
170°	1807.8	1806.2	1804.6	1803.0	1801.5	1800.8	1801.1	1801.5	1801.8	1802.0	1803.9
172.5°	1819.1	1817.8	1816.5	1815.1	1813.8	1813.2	1813.3	1813.4	1813.4	1813.5	1815.6
175°	1834.8	1833.2	1831.6	1830.0	1828.4	1827.5	1827.2	1826.8	1826.6	1826.3	1828.4
177.5°	1839.8	1838.6	1837.4	1836.1	1834.8	1834.2	1834.2	1834.2	1834.2	1834.2	1836.0
180°	1837.6	1837.6	1837.6	1837.6	1837.6	1837.6	1837.6	1837.6	1837.6	1837.6	1837.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
2.5°	397.0	397.6	398.1	398.3	398.3	398.2	398.1	398.0
5°	396.0	396.7	397.6	397.9	397.8	397.7	397.6	397.5
7.5°	393.9	394.7	395.7	396.1	396.0	395.9	395.8	395.7
10°	391.7	392.6	393.5	393.9	393.8	393.7	393.6	393.5
12.5°	388.7	389.6	390.3	390.7	390.7	390.7	390.7	390.6
15°	383.2	384.1	385.0	385.4	385.3	385.2	385.1	385.0
17.5°	376.5	377.5	378.4	378.8	378.7	378.6	378.6	378.5
20°	371.4	372.4	373.3	373.9	373.9	373.9	373.9	373.9
22.5°	365.3	366.3	367.3	367.9	368.1	368.2	368.3	368.5
25°	356.0	357.0	358.2	358.7	358.8	358.9	359.0	359.1
27.5°	345.4	346.5	347.5	348.1	348.2	348.3	348.4	348.6
30°	338.1	339.2	340.3	340.9	341.1	341.4	341.6	341.8
32.5°	330.5	331.9	333.1	333.8	334.0	334.2	334.4	334.6
35°	318.7	320.0	321.4	322.3	322.5	322.8	323.2	323.5
37.5°	306.2	307.6	309.0	309.9	310.2	310.5	310.9	311.1
40°	297.5	298.9	300.4	301.3	301.7	302.2	302.6	302.9
42.5°	288.8	290.5	292.1	293.1	293.4	293.7	294.1	294.4
45°	275.5	277.2	278.9	279.9	280.5	281.0	281.4	281.9
47.5°	261.5	263.2	264.9	266.1	266.7	267.3	267.9	268.5
50°	251.6	253.5	255.5	256.8	257.4	258.0	258.6	259.2
52.5°	241.6	243.6	245.5	246.9	247.4	248.0	248.6	249.2
55°	226.6	228.6	230.5	231.9	232.4	233.0	233.7	234.2
57.5°	210.8	213.2	215.6	217.0	217.5	218.1	218.7	219.2
60°	200.0	202.3	204.5	206.0	206.9	207.6	208.5	209.2
62.5°	189.3	191.5	193.8	195.4	196.1	196.9	197.7	198.5
65°	172.7	175.2	177.7	179.3	180.1	180.9	181.7	182.5
67.5°	156.5	159.0	161.5	163.2	163.9	164.7	165.4	166.3
70°	145.0	147.7	150.3	152.0	152.7	153.4	154.1	154.8
72.5°	134.1	136.8	139.3	141.0	141.8	142.5	143.4	144.1
75°	117.5	120.3	123.1	124.9	125.8	126.7	127.6	128.5
77.5°	102.1	104.9	107.7	109.6	110.6	111.5	112.4	113.4
80°	92.1	95.0	98.0	99.9	100.7	101.5	102.3	103.0
82.5°	82.2	85.3	88.3	90.3	91.1	92.0	92.9	93.8
85°	68.4	71.4	74.4	76.3	77.3	78.3	79.3	80.3
87.5°	63.7	66.9	70.2	72.4	73.3	74.4	75.3	76.3
90°	85.0	89.7	94.5	97.6	99.1	100.5	101.9	103.3
92.5°	106.1	110.1	114.0	116.6	117.7	118.9	120.1	121.3
95°	154.1	157.7	161.4	163.6	164.5	165.3	166.3	167.1
97.5°	214.3	218.1	221.8	224.1	225.0	225.8	226.7	227.5
100°	258.0	261.3	264.6	266.6	267.3	268.0	268.6	269.4
102.5°	304.3	307.7	311.2	313.5	314.5	315.6	316.6	317.6
105°	374.6	378.0	381.4	384.0	385.7	387.5	389.2	391.0
107.5°	451.0	454.4	457.7	459.7	460.3	461.0	461.7	462.3
110°	502.0	503.6	505.3	507.0	508.7	510.5	512.2	514.0



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CATALOG NUMBER: S124DIW-S350D1560U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	556.8	558.8	560.9	562.4	563.5	564.4	565.4	566.4
115°	641.5	643.4	645.3	646.4	646.8	647.1	647.5	647.9
117.5°	722.6	723.6	724.6	725.2	725.4	725.5	725.7	725.9
120°	777.7	778.1	778.4	779.4	780.8	782.2	783.6	785.0
122.5°	833.8	834.6	835.6	835.8	835.4	834.9	834.5	834.1
125°	916.1	917.3	918.5	919.2	919.1	919.1	919.1	919.0
127.5°	994.2	995.3	996.5	997.1	997.3	997.5	997.7	997.8
130°	1049.2	1050.4	1051.5	1051.8	1051.1	1050.5	1049.8	1049.1
132.5°	1101.1	1102.1	1103.2	1103.8	1103.9	1104.0	1104.1	1104.2
135°	1178.5	1179.4	1180.3	1180.6	1180.3	1179.9	1179.6	1179.2
137.5°	1253.6	1254.2	1254.8	1255.5	1256.2	1256.9	1257.5	1258.2
140°	1303.3	1304.2	1305.1	1305.8	1306.0	1306.1	1306.3	1306.5
142.5°	1350.5	1351.5	1352.6	1353.3	1353.7	1354.1	1354.3	1354.7
145°	1421.7	1422.0	1422.3	1422.2	1421.6	1421.1	1420.5	1419.9
147.5°	1486.5	1486.3	1486.2	1486.1	1486.1	1486.1	1486.1	1486.1
150°	1527.8	1527.8	1527.8	1527.7	1527.3	1527.0	1526.7	1526.4
152.5°	1566.8	1567.5	1568.3	1568.3	1567.4	1566.7	1565.8	1565.0
155°	1621.3	1622.5	1623.8	1623.8	1622.5	1621.3	1620.0	1618.7
157.5°	1669.2	1670.2	1671.1	1671.0	1670.0	1669.0	1667.8	1666.8
160°	1698.8	1699.8	1700.7	1700.3	1698.8	1697.2	1695.6	1694.0
162.5°	1725.3	1727.0	1728.7	1728.8	1727.2	1725.7	1724.1	1722.5
165°	1760.4	1762.3	1764.2	1764.5	1763.2	1762.0	1760.7	1759.4
167.5°	1790.0	1791.9	1793.8	1793.8	1791.8	1789.8	1787.8	1785.8
170°	1805.9	1807.8	1809.7	1809.5	1807.3	1805.1	1802.9	1800.6
172.5°	1817.8	1819.9	1822.0	1822.0	1819.8	1817.6	1815.3	1813.2
175°	1830.7	1832.9	1835.1	1835.1	1832.9	1830.7	1828.4	1826.3
177.5°	1837.8	1839.5	1841.3	1841.2	1839.1	1837.1	1835.1	1833.1
180°	1837.6	1837.6	1837.6	1837.6	1837.6	1837.6	1837.6	1837.6

(END OF REPORT)