

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: P332731-840

Luminaire Tested: **S124DIW-S350D1050U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332731-840
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-S350D1050U840-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1050 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5766.3 lumens
Efficiency: N/A
Efficacy: 151.7 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

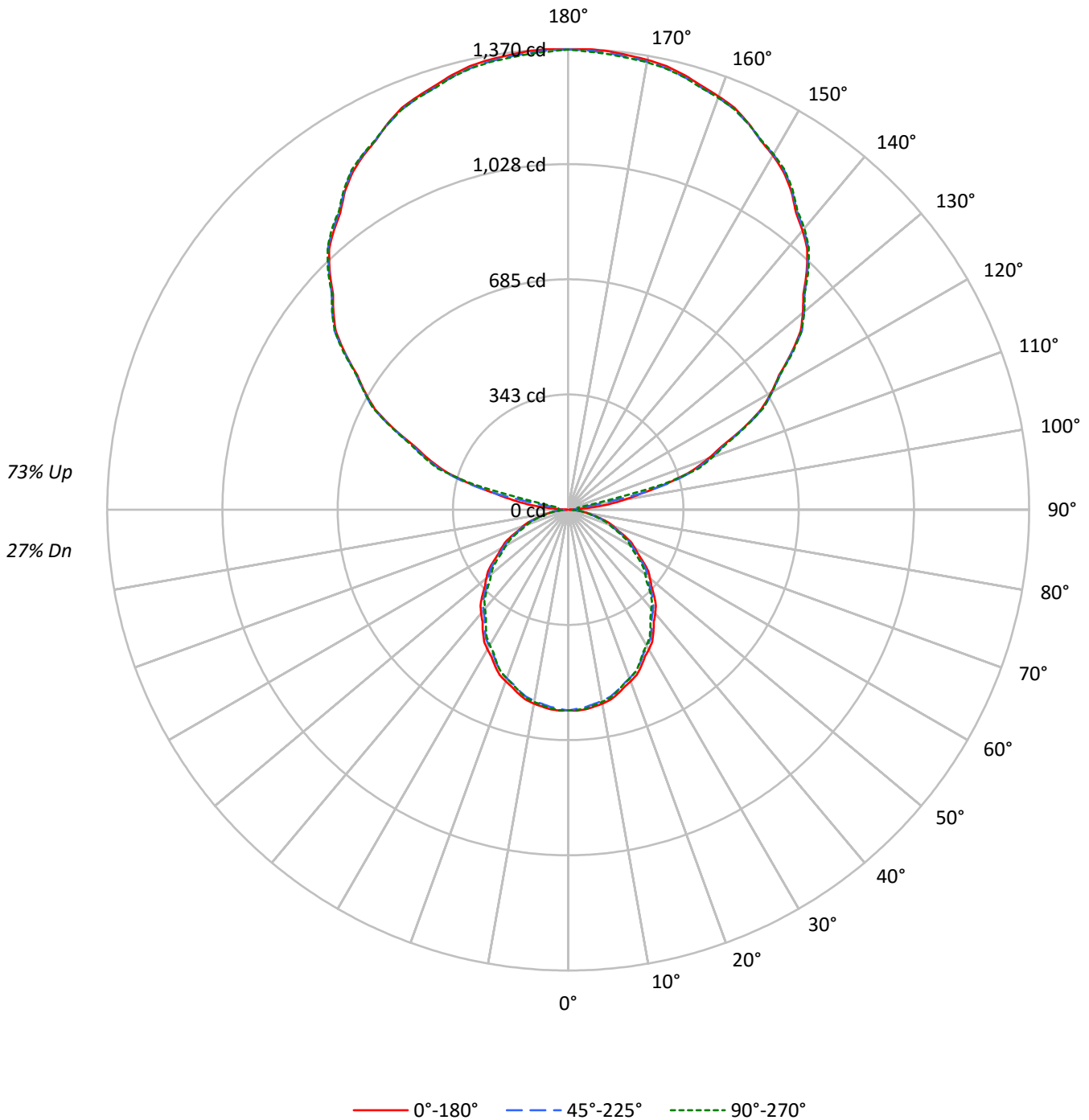
Input Watts (W): 38
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	102	102	102	102	91	91	91	91	70	70	70	52	52	52	35	35	35	27
1	93	88	85	81	82	79	76	73	61	59	57	45	44	43	31	30	29	22
2	84	77	71	66	75	69	64	60	54	50	47	40	38	36	27	26	24	19
3	77	68	61	55	68	61	55	50	47	43	40	35	32	30	24	22	21	16
4	70	60	52	46	62	54	47	42	42	37	34	31	28	26	21	19	18	14
5	64	53	45	40	57	48	41	36	37	33	29	28	25	22	19	17	16	12
6	59	47	40	34	52	43	36	31	34	29	25	25	22	19	17	15	14	10
7	54	43	35	30	48	38	32	27	30	26	22	23	20	17	16	14	12	9
8	50	39	31	26	45	35	28	24	28	23	19	21	18	15	14	12	11	8
9	47	35	28	23	42	32	25	21	25	21	17	19	16	13	13	11	10	7
10	44	32	25	20	39	29	23	19	23	19	15	18	14	12	12	10	9	7

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	1.0
10°-20°	158.3	2.7
20°-30°	233.0	4.0
30°-40°	270.8	4.7
40°-50°	270.9	4.7
50°-60°	236.9	4.1
60°-70°	175.9	3.1
70°-80°	100.0	1.7
80°-90°	32.8	0.6
90°-100°	46.8	0.8
100°-110°	298.3	5.2
110°-120°	570.7	9.9
120°-130°	724.4	12.6
130°-140°	775.1	13.4
140°-150°	724.8	12.6
150°-160°	584.5	10.1
160°-170°	377.0	6.5
170°-180°	129.9	2.3
0°-30°	447.4	7.8
0°-40°	718.3	12.5
0°-60°	1226.1	21.3
0°-90°	1534.8	26.6
90°-120°	915.8	15.9
90°-150°	3140.1	54.5
90°-180°	4232.0	73.4
0°-180°	5766.3	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	28
90°	3	14	22	28	31	4
95°	56	23	22	28	30	72
105°	308	314	319	326	292	322
115°	575	578	577	579	579	566
125°	808	812	810	813	814	721
135°	1003	1002	1006	1008	1010	772
145°	1156	1159	1159	1160	1162	722
155°	1268	1268	1266	1269	1267	584
165°	1337	1332	1332	1339	1331	378
175°	1368	1362	1363	1371	1360	130
180°	1368	1368	1368	1368	1368	



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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°	10.6	11.0	11.4	11.8	12.2	12.5	12.8	13.1	13.4	13.6	13.9
90°	3.0	5.6	8.1	10.6	13.0	15.2	17.1	18.9	20.7	22.5	23.8
92.5°	12.9	13.0	13.1	13.3	13.4	14.4	16.3	18.1	19.9	21.7	23.0
95°	56.2	48.6	40.8	33.1	25.3	21.6	21.8	22.0	22.3	22.5	23.8
97.5°	119.5	124.3	129.2	134.0	138.8	128.6	103.1	77.8	52.4	27.0	27.2
100°	167.8	171.9	176.0	180.1	184.2	170.6	139.2	107.8	76.4	45.0	41.2
102.5°	221.9	224.8	227.8	230.9	233.8	233.3	229.2	225.1	221.0	216.9	175.2
105°	308.0	309.3	310.7	312.0	313.5	314.7	315.8	317.0	318.1	319.2	321.2
107.5°	388.0	388.7	389.3	390.0	390.7	391.8	393.3	395.0	396.5	398.0	399.0
110°	442.0	442.7	443.3	444.0	444.7	445.8	447.2	448.5	449.9	451.2	451.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	494.4	495.6	496.9	498.1	499.3	500.3	500.9	501.5	502.1	502.8	502.7
115°	575.0	575.7	576.4	577.0	577.7	577.9	577.7	577.5	577.3	577.0	577.5
117.5°	647.6	648.5	649.4	650.4	651.3	652.0	652.5	653.0	653.5	654.0	653.9
120°	696.8	697.7	698.6	699.5	700.4	700.7	700.5	700.3	700.0	699.8	700.3
122.5°	742.7	743.2	743.7	744.3	744.8	745.3	745.6	745.9	746.2	746.5	746.8
125°	808.3	809.2	810.1	811.0	811.9	812.1	811.7	811.2	810.8	810.3	811.0
127.5°	870.5	870.7	871.0	871.2	871.4	872.0	873.1	874.1	875.1	876.3	876.2
130°	910.6	910.9	911.1	911.3	911.5	912.0	912.7	913.3	914.0	914.7	914.9
132.5°	947.5	947.9	948.3	948.7	949.1	949.8	950.6	951.5	952.3	953.2	953.4
135°	1002.7	1002.5	1002.3	1002.0	1001.8	1002.2	1003.1	1004.0	1004.9	1005.8	1006.2
137.5°	1051.6	1051.7	1051.8	1051.9	1052.0	1052.5	1053.5	1054.5	1055.5	1056.5	1057.0
140°	1083.6	1084.0	1084.5	1084.9	1085.4	1085.8	1086.3	1086.7	1087.2	1087.6	1088.3
142.5°	1112.2	1113.0	1113.8	1114.7	1115.5	1116.0	1116.3	1116.5	1116.8	1117.1	1117.6
145°	1156.2	1156.9	1157.5	1158.2	1158.9	1159.2	1159.2	1159.2	1159.2	1159.2	1159.5
147.5°	1191.1	1192.4	1193.8	1195.0	1196.3	1196.8	1196.6	1196.4	1196.1	1195.9	1196.1
150°	1216.6	1217.5	1218.4	1219.3	1220.2	1220.5	1220.3	1220.1	1219.8	1219.6	1219.6
152.5°	1237.8	1238.6	1239.3	1240.0	1240.7	1240.9	1240.5	1240.1	1239.7	1239.3	1239.6
155°	1267.7	1268.0	1268.2	1268.4	1268.6	1268.4	1267.7	1267.1	1266.4	1265.7	1266.6
157.5°	1292.9	1292.7	1292.6	1292.4	1292.3	1291.9	1291.1	1290.3	1289.6	1288.8	1290.0
160°	1307.6	1307.0	1306.3	1305.6	1304.8	1304.4	1304.2	1303.9	1303.7	1303.5	1304.8
162.5°	1320.7	1319.9	1319.0	1318.1	1317.3	1316.7	1316.5	1316.3	1316.1	1315.8	1317.2
165°	1337.3	1336.2	1335.0	1333.8	1332.7	1332.2	1332.2	1332.2	1332.2	1332.2	1334.0
167.5°	1350.4	1349.2	1348.1	1346.9	1345.6	1345.0	1344.8	1344.7	1344.6	1344.4	1346.5
170°	1357.8	1356.3	1355.0	1353.6	1352.3	1351.7	1351.9	1352.2	1352.4	1352.6	1354.4
172.5°	1362.6	1361.3	1359.9	1358.6	1357.2	1356.7	1356.9	1357.1	1357.4	1357.6	1359.4
175°	1368.0	1366.7	1365.2	1363.9	1362.5	1362.0	1362.2	1362.4	1362.6	1362.9	1364.9
177.5°	1370.4	1369.2	1367.9	1366.7	1365.3	1364.9	1365.2	1365.6	1365.9	1366.3	1367.8
180°	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0



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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°	14.2	14.5	14.7	14.9	15.0	15.1	15.2	15.3
90°	25.2	26.6	28.0	28.9	29.3	29.8	30.2	30.7
92.5°	24.4	25.8	27.2	27.9	28.0	28.1	28.2	28.3
95°	25.2	26.6	28.0	28.8	29.0	29.2	29.5	29.7
97.5°	27.3	27.5	27.6	27.8	28.0	28.2	28.4	28.7
100°	37.3	33.4	29.6	27.8	28.0	28.2	28.4	28.7
102.5°	133.5	91.8	50.1	29.3	29.3	29.4	29.4	29.5
105°	323.4	325.4	327.4	324.4	316.2	308.0	299.8	291.6
107.5°	400.0	401.0	402.0	402.9	403.8	404.7	405.6	406.4
110°	452.1	452.6	453.0	453.6	454.3	454.9	455.7	456.4



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CATALOG NUMBER: S124DIW-S350D1050U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	502.6	502.5	502.4	502.8	503.7	504.5	505.4	506.2
115°	577.9	578.5	578.9	579.2	579.2	579.2	579.2	579.2
117.5°	653.8	653.8	653.7	653.6	653.5	653.4	653.3	653.2
120°	700.7	701.3	701.7	701.7	701.3	700.7	700.3	699.8
122.5°	747.1	747.3	747.6	747.5	747.1	746.6	746.2	745.7
125°	811.7	812.4	813.0	813.5	813.7	814.0	814.3	814.5
127.5°	876.0	875.9	875.7	875.6	875.4	875.1	874.9	874.8
130°	915.1	915.4	915.6	915.7	915.7	915.7	915.7	915.7
132.5°	953.6	953.9	954.1	954.1	953.9	953.7	953.6	953.4
135°	1006.7	1007.1	1007.6	1008.0	1008.6	1009.0	1009.5	1009.9
137.5°	1057.5	1058.0	1058.5	1058.7	1058.5	1058.4	1058.3	1058.1
140°	1089.0	1089.6	1090.4	1090.9	1091.1	1091.3	1091.5	1091.8
142.5°	1118.1	1118.6	1119.1	1119.3	1119.4	1119.4	1119.5	1119.5
145°	1159.7	1159.9	1160.1	1160.5	1160.9	1161.4	1161.8	1162.4
147.5°	1196.3	1196.4	1196.6	1196.8	1197.1	1197.3	1197.5	1197.7
150°	1219.6	1219.6	1219.6	1219.7	1219.9	1220.2	1220.4	1220.6
152.5°	1240.0	1240.3	1240.7	1240.8	1240.7	1240.5	1240.4	1240.3
155°	1267.5	1268.4	1269.3	1269.4	1268.7	1268.1	1267.4	1266.7
157.5°	1291.1	1292.3	1293.5	1293.5	1292.3	1291.1	1290.0	1288.8
160°	1306.3	1307.6	1309.0	1309.0	1307.6	1306.3	1304.8	1303.5
162.5°	1318.5	1319.9	1321.2	1321.2	1319.6	1318.1	1316.6	1314.9
165°	1335.8	1337.7	1339.5	1339.3	1337.3	1335.2	1333.2	1331.1
167.5°	1348.5	1350.5	1352.4	1352.3	1350.1	1347.8	1345.5	1343.2
170°	1356.2	1358.1	1359.9	1359.7	1357.4	1355.1	1352.8	1350.6
172.5°	1361.2	1363.0	1364.8	1364.5	1362.0	1359.6	1357.2	1354.6
175°	1367.0	1369.0	1371.1	1370.7	1368.0	1365.2	1362.5	1359.8
177.5°	1369.3	1370.7	1372.2	1371.8	1369.6	1367.5	1365.2	1363.1
180°	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0

(END OF REPORT)