

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: P332104-840

Luminaire Tested: **S123DIW-S340D1030U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332104-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S340D1030U840-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1030 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5618.8 lumens
Efficiency: N/A
Efficacy: 147.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

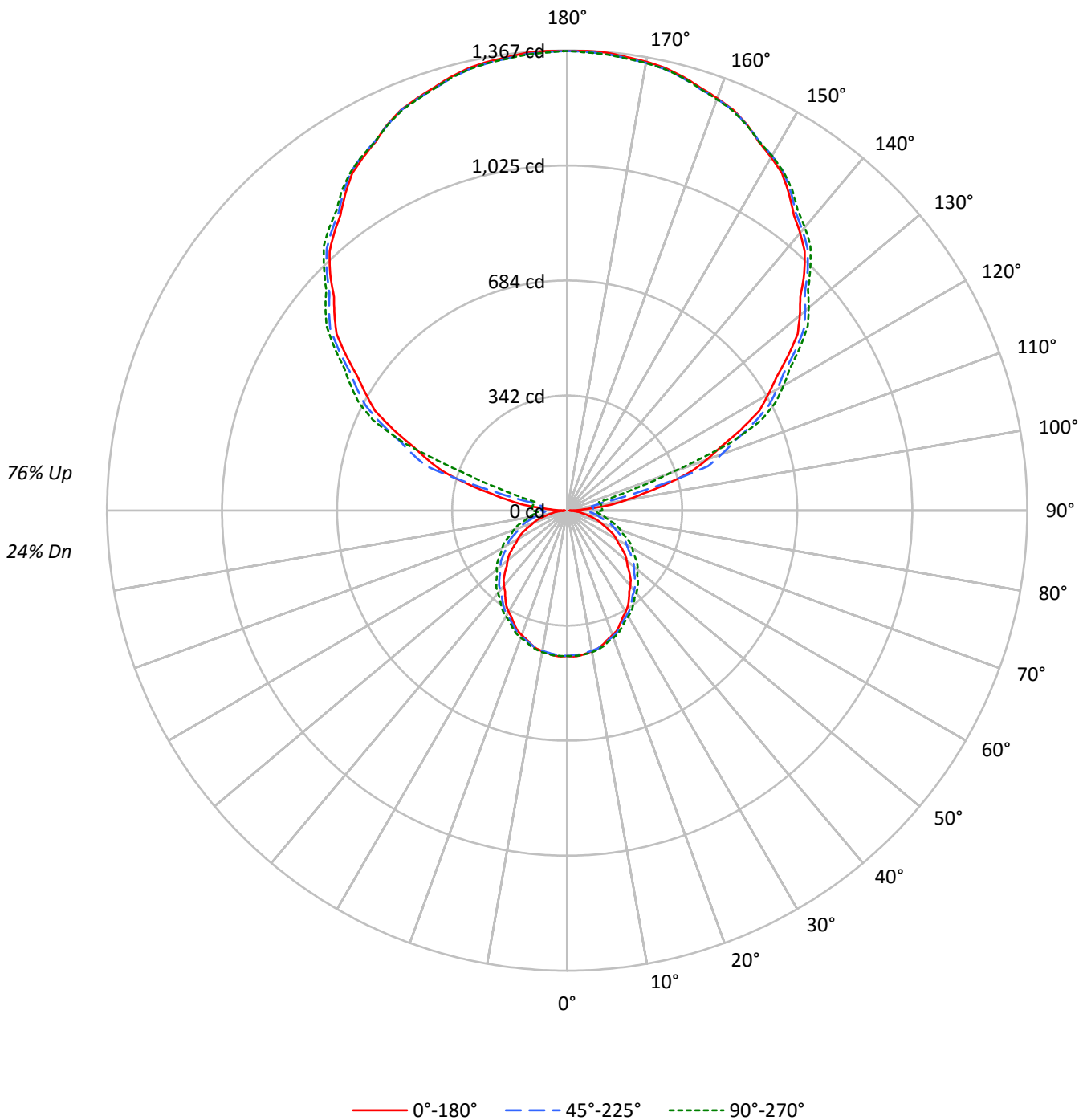
Input Watts (W): 38
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	32	32	32	24
1	91	87	83	80	81	77	74	71	59	57	55	43	41	40	27	27	26	19
2	83	76	70	64	73	67	62	58	52	48	45	37	35	33	24	23	21	15
3	75	66	59	53	67	59	53	48	45	41	38	33	30	28	21	19	18	13
4	69	58	51	45	61	52	45	40	40	35	32	29	26	23	19	17	15	11
5	63	52	44	38	56	46	39	34	36	31	27	26	23	20	17	15	13	9
6	58	46	38	33	51	41	35	30	32	27	23	23	20	17	15	13	12	8
7	53	42	34	28	47	37	30	26	29	24	20	21	18	15	14	12	10	7
8	49	37	30	25	44	34	27	23	26	21	18	19	16	13	13	11	9	6
9	46	34	27	22	41	31	24	20	24	19	16	17	14	12	12	10	8	6
10	43	31	24	19	38	28	22	18	22	17	14	16	13	11	11	9	7	5

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4649	4649	4649
5°	4664	4533	4534
10°	4622	4428	4406
15°	4562	4309	4265
20°	4477	4174	4110
25°	4372	4019	3947
30°	4265	3879	3780
35°	4143	3731	3649
40°	4030	3595	3508
45°	3902	3466	3395
50°	3776	3338	3272
55°	3636	3207	3158
60°	3499	3074	3045
65°	3360	2931	2907
70°	3149	2772	2766
75°	2886	2590	2626
80°	2583	2410	2462
85°	2294	2286	2367



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.9	0.7
10°-20°	116.7	2.1
20°-30°	174.6	3.1
30°-40°	208.5	3.7
40°-50°	218.1	3.9
50°-60°	204.7	3.6
60°-70°	171.0	3.0
70°-80°	122.3	2.2
80°-90°	76.8	1.4
90°-100°	95.4	1.7
100°-110°	270.2	4.8
110°-120°	590.7	10.5
120°-130°	736.4	13.1
130°-140°	778.9	13.9
140°-150°	724.2	12.9
150°-160°	583.2	10.4
160°-170°	376.4	6.7
170°-180°	129.7	2.3
0°-30°	332.3	5.9
0°-40°	540.8	9.6
0°-60°	963.6	17.1
0°-90°	1333.7	23.7
90°-120°	956.3	17.0
90°-150°	3195.9	56.9
90°-180°	4285.0	76.3
0°-180°	5618.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	432	432	432	432	432	
5°	432	431	429	432	432	41
15°	412	413	413	417	417	116
25°	372	376	378	384	384	171
35°	320	327	334	340	342	200
45°	262	273	285	293	297	202
55°	200	215	232	244	248	179
65°	138	156	177	191	196	136
75°	75	97	120	135	142	80
85°	23	47	72	87	92	24
90°	7	41	78	97	104	7
95°	67	47	78	99	104	81
105°	306	323	257	101	97	324
115°	569	582	607	628	636	562
125°	801	809	826	838	844	715
135°	996	1002	1011	1022	1022	766
145°	1149	1155	1157	1163	1165	719
155°	1265	1263	1264	1268	1263	583
165°	1334	1331	1330	1337	1331	377
175°	1365	1361	1361	1368	1360	130
180°	1365	1365	1365	1365	1365	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9
2.5°	433.8	433.6	433.3	433.1	432.8	432.4	431.7	431.0	430.4	429.7	430.4
5°	432.4	432.2	432.0	431.8	431.6	431.2	430.5	429.9	429.3	428.7	429.5
7.5°	428.2	428.3	428.3	428.3	428.4	428.1	427.5	426.9	426.3	425.7	426.7
10°	424.4	424.6	424.9	425.1	425.3	425.2	424.5	424.0	423.5	423.0	424.0
12.5°	419.9	420.2	420.5	420.8	421.1	421.0	420.7	420.3	420.0	419.6	420.6
15°	411.7	412.0	412.3	412.6	412.9	413.1	412.9	412.8	412.7	412.6	413.7
17.5°	401.4	402.0	402.6	403.2	403.8	404.1	404.1	404.0	404.0	404.0	405.0
20°	393.8	394.5	395.1	395.8	396.4	396.8	397.0	397.2	397.4	397.6	398.6
22.5°	386.0	386.6	387.2	387.8	388.5	388.9	389.2	389.5	389.8	390.1	391.3
25°	371.7	372.7	373.9	374.9	375.9	376.6	376.9	377.2	377.5	377.9	379.2
27.5°	357.4	358.6	359.8	361.0	362.2	363.1	363.8	364.5	365.2	365.8	367.0
30°	347.3	348.6	350.0	351.3	352.7	353.8	354.7	355.5	356.3	357.2	358.4
32.5°	336.0	337.5	339.0	340.5	342.0	343.4	344.5	345.6	346.7	347.7	349.1
35°	319.9	321.6	323.4	325.0	326.7	328.2	329.5	330.9	332.2	333.7	335.2
37.5°	303.1	304.9	306.8	308.7	310.5	312.4	314.0	315.7	317.4	319.0	320.8
40°	291.8	293.7	295.5	297.4	299.2	301.2	303.4	305.5	307.5	309.6	311.4
42.5°	279.3	281.7	283.9	286.2	288.5	290.7	293.0	295.1	297.3	299.4	301.4
45°	261.7	264.2	266.6	269.1	271.7	274.2	276.8	279.4	282.1	284.7	286.7
47.5°	243.1	245.9	248.7	251.7	254.5	257.4	260.3	263.4	266.3	269.3	271.6
50°	231.1	234.0	236.9	239.8	242.8	245.8	249.0	252.4	255.6	258.8	261.3
52.5°	218.2	221.4	224.4	227.5	230.7	234.0	237.5	241.2	244.7	248.2	250.7
55°	199.5	203.0	206.4	209.8	213.3	216.9	220.7	224.5	228.2	232.0	234.8
57.5°	181.3	184.8	188.4	192.1	195.6	199.5	203.6	207.7	211.9	216.0	218.8
60°	168.4	172.2	176.0	179.8	183.5	187.5	191.9	196.1	200.4	204.7	207.6
62.5°	156.4	160.3	164.1	167.9	171.8	176.0	180.6	185.1	189.7	194.2	197.0
65°	137.8	142.0	146.0	150.1	154.2	158.5	163.1	167.7	172.3	176.9	180.1
67.5°	119.1	123.4	127.7	132.0	136.3	140.9	145.5	150.3	154.9	159.7	163.0
70°	105.8	110.4	114.8	119.4	123.8	128.7	133.6	138.7	143.7	148.7	152.1
72.5°	93.8	98.4	102.8	107.3	111.8	116.6	121.8	127.0	132.2	137.4	140.9
75°	74.8	79.8	84.6	89.6	94.5	99.6	104.8	110.0	115.2	120.5	123.9
77.5°	58.3	63.2	68.2	73.1	78.1	83.2	88.5	93.7	99.0	104.3	108.0
80°	46.6	51.7	56.9	62.0	67.1	72.4	77.8	83.2	88.7	94.1	97.7
82.5°	36.5	41.6	46.9	52.0	57.3	62.6	68.2	73.6	79.2	84.7	88.3
85°	23.0	28.3	33.5	38.8	43.9	49.4	54.9	60.4	65.9	71.5	75.0
87.5°	12.7	18.4	24.0	29.7	35.3	41.1	47.1	53.0	58.9	64.8	68.6
90°	7.2	14.5	21.9	29.3	36.7	44.4	52.7	61.0	69.3	77.6	82.0
92.5°	24.6	28.6	32.6	36.6	40.6	46.3	53.7	61.2	68.7	76.1	81.0
95°	67.1	61.9	56.8	51.6	46.4	47.7	55.2	62.8	70.4	78.1	82.8
97.5°	129.0	128.5	128.1	127.5	127.1	121.2	109.9	98.6	87.2	75.8	80.8
100°	175.6	183.5	191.4	199.2	207.0	195.8	165.5	135.1	104.7	74.4	79.3
102.5°	228.8	235.1	241.4	247.6	253.9	240.1	206.5	172.8	139.1	105.4	102.8
105°	306.0	311.0	316.0	321.0	326.0	320.6	304.8	289.0	273.2	257.4	220.5
107.5°	387.0	391.1	395.3	399.4	403.4	409.3	416.8	424.2	431.7	439.2	412.7
110°	441.0	444.6	448.4	452.0	455.8	460.9	467.6	474.2	480.9	487.6	482.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	492.9	496.1	499.3	502.4	505.6	510.5	516.9	523.4	530.0	536.4	539.2
115°	569.4	572.0	574.6	577.1	579.8	584.0	589.8	595.6	601.4	607.1	611.9
117.5°	643.7	646.1	648.6	651.1	653.5	657.0	661.6	666.1	670.7	675.3	679.5
120°	689.6	692.2	694.7	697.2	699.8	703.2	707.3	711.3	715.5	719.6	723.9
122.5°	736.7	738.6	740.5	742.5	744.4	747.4	751.5	755.7	759.8	764.0	767.6
125°	800.7	802.5	804.3	806.1	807.9	810.8	814.7	818.6	822.5	826.5	829.2
127.5°	863.1	864.8	866.6	868.3	870.0	872.6	876.2	879.8	883.4	887.0	889.8
130°	902.1	903.8	905.5	907.3	908.9	911.3	914.2	917.3	920.3	923.2	926.1
132.5°	939.1	940.9	942.6	944.4	946.2	948.3	950.7	953.1	955.4	957.9	960.7
135°	996.0	997.2	998.5	999.8	1001.0	1002.6	1004.7	1006.7	1008.8	1010.9	1013.4
137.5°	1044.6	1046.2	1047.8	1049.5	1051.1	1052.5	1053.6	1054.8	1055.9	1057.0	1059.8
140°	1076.6	1078.0	1079.3	1080.8	1082.1	1083.3	1084.2	1085.2	1086.2	1087.2	1089.6
142.5°	1106.7	1107.9	1109.2	1110.4	1111.8	1112.8	1113.5	1114.3	1115.0	1115.7	1117.8
145°	1148.7	1150.1	1151.7	1153.1	1154.6	1155.5	1156.0	1156.4	1156.9	1157.3	1158.6
147.5°	1187.8	1188.8	1189.8	1190.8	1191.9	1192.7	1193.1	1193.6	1194.0	1194.5	1195.2
150°	1212.1	1212.7	1213.5	1214.2	1214.8	1215.4	1215.8	1216.3	1216.7	1217.2	1217.6
152.5°	1234.1	1234.4	1234.7	1235.0	1235.3	1235.6	1235.9	1236.1	1236.4	1236.7	1237.5
155°	1264.9	1264.4	1263.9	1263.5	1263.0	1262.9	1263.1	1263.3	1263.6	1263.8	1265.0
157.5°	1288.8	1288.8	1288.7	1288.7	1288.6	1288.5	1288.3	1288.0	1287.8	1287.6	1288.9
160°	1303.4	1303.1	1302.9	1302.7	1302.5	1302.2	1302.0	1301.8	1301.6	1301.4	1302.7
162.5°	1317.2	1316.6	1316.1	1315.5	1314.8	1314.4	1314.2	1314.0	1313.7	1313.5	1315.0
165°	1333.8	1333.1	1332.5	1331.8	1331.1	1330.7	1330.4	1330.2	1330.0	1329.8	1331.6
167.5°	1346.8	1345.9	1345.0	1344.1	1343.2	1342.7	1342.7	1342.7	1342.7	1342.7	1344.5
170°	1354.1	1353.2	1352.3	1351.4	1350.5	1350.1	1350.1	1350.1	1350.1	1350.1	1351.8
172.5°	1359.0	1357.9	1356.9	1355.7	1354.6	1354.2	1354.3	1354.5	1354.7	1354.9	1356.8
175°	1365.2	1364.1	1363.0	1361.9	1360.8	1360.3	1360.5	1360.8	1361.0	1361.2	1362.8
177.5°	1366.9	1365.9	1365.1	1364.2	1363.3	1362.9	1363.1	1363.3	1363.4	1363.6	1365.1
180°	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9
2.5°	431.0	431.7	432.4	432.6	432.6	432.5	432.4	432.3
5°	430.3	431.2	432.0	432.4	432.3	432.1	432.0	431.9
7.5°	427.8	428.8	429.8	430.3	430.2	430.0	429.9	429.8
10°	425.2	426.2	427.2	427.6	427.4	427.2	427.0	426.8
12.5°	421.5	422.5	423.4	423.8	423.6	423.4	423.2	423.0
15°	414.8	415.8	416.9	417.3	417.2	417.1	417.0	416.9
17.5°	405.9	406.9	407.8	408.2	408.0	407.9	407.8	407.6
20°	399.5	400.4	401.4	401.9	402.0	402.1	402.2	402.3
22.5°	392.4	393.6	394.9	395.5	395.4	395.3	395.3	395.2
25°	380.5	381.9	383.2	384.0	384.0	384.0	384.0	384.0
27.5°	368.1	369.3	370.5	371.1	371.2	371.3	371.3	371.4
30°	359.6	360.9	362.1	362.7	362.7	362.7	362.7	362.7
32.5°	350.4	351.7	353.0	353.9	354.2	354.4	354.7	354.9
35°	336.8	338.3	339.9	340.9	341.3	341.7	342.1	342.5
37.5°	322.6	324.4	326.2	327.2	327.5	327.9	328.2	328.5
40°	313.2	315.0	316.7	317.8	318.2	318.7	319.1	319.5
42.5°	303.4	305.3	307.2	308.5	309.1	309.6	310.2	310.8
45°	288.6	290.6	292.7	294.1	294.9	295.7	296.6	297.4
47.5°	273.8	276.1	278.3	279.7	280.3	281.0	281.7	282.4
50°	263.6	266.0	268.4	270.0	270.7	271.5	272.2	273.0
52.5°	253.3	255.7	258.2	259.9	260.8	261.8	262.6	263.5
55°	237.6	240.4	243.3	245.1	245.9	246.8	247.6	248.4
57.5°	221.7	224.5	227.3	229.2	230.2	231.3	232.3	233.2
60°	210.6	213.5	216.4	218.4	219.5	220.8	221.9	223.1
62.5°	200.0	202.9	205.8	207.8	208.9	210.0	211.1	212.2
65°	183.2	186.3	189.5	191.6	192.6	193.7	194.7	195.7
67.5°	166.4	169.9	173.3	175.5	176.3	177.2	178.1	178.9
70°	155.4	158.8	162.1	164.3	165.3	166.3	167.4	168.4
72.5°	144.2	147.6	151.1	153.4	154.4	155.4	156.5	157.5
75°	127.3	130.8	134.3	136.6	137.8	139.2	140.4	141.7
77.5°	111.6	115.2	118.9	121.1	122.1	123.1	124.0	125.0
80°	101.2	104.8	108.4	110.6	111.7	112.7	113.8	114.8
82.5°	91.8	95.3	99.0	101.2	102.3	103.3	104.3	105.4
85°	78.7	82.2	85.7	88.1	89.1	90.2	91.2	92.2
87.5°	72.3	76.0	79.8	82.2	83.3	84.4	85.6	86.7
90°	86.4	90.9	95.3	98.4	99.8	101.3	102.8	104.3
92.5°	85.9	90.9	95.7	98.9	100.1	101.3	102.6	103.8
95°	87.7	92.5	97.4	100.3	101.3	102.3	103.4	104.4
97.5°	85.7	90.6	95.5	98.7	99.9	101.2	102.4	103.7
100°	84.1	88.9	93.7	96.8	98.1	99.4	100.6	101.9
102.5°	100.2	97.5	94.8	94.2	95.7	97.1	98.7	100.1
105°	183.5	146.5	109.6	91.8	93.1	94.5	95.9	97.4
107.5°	386.3	359.8	333.4	305.5	276.4	247.2	218.0	188.9
110°	478.2	473.4	468.7	450.6	419.2	387.9	356.5	325.1



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CATALOG NUMBER: S123DIW-S340D1030U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	542.0	544.7	547.5	545.9	540.1	534.2	528.3	522.4
115°	616.7	621.5	626.2	629.4	631.2	633.0	634.7	636.4
117.5°	683.9	688.1	692.5	695.1	696.1	697.1	698.0	699.0
120°	728.0	732.3	736.5	738.9	739.6	740.4	741.1	741.8
122.5°	771.1	774.8	778.3	780.6	781.5	782.4	783.4	784.3
125°	831.8	834.5	837.1	839.0	840.2	841.4	842.5	843.7
127.5°	892.5	895.3	898.2	899.7	899.9	900.2	900.5	900.7
130°	929.0	931.9	934.8	936.3	936.4	936.6	936.9	937.1
132.5°	963.5	966.2	969.1	970.5	970.6	970.7	970.8	970.9
135°	1015.9	1018.5	1021.1	1022.3	1022.1	1022.0	1021.8	1021.7
137.5°	1062.5	1065.3	1068.0	1069.4	1069.4	1069.5	1069.6	1069.6
140°	1092.2	1094.6	1097.1	1098.3	1098.4	1098.5	1098.5	1098.6
142.5°	1119.9	1122.1	1124.2	1125.2	1125.1	1125.0	1124.9	1124.8
145°	1159.9	1161.2	1162.5	1163.4	1163.8	1164.2	1164.6	1165.0
147.5°	1195.9	1196.6	1197.3	1197.3	1196.6	1196.0	1195.3	1194.7
150°	1218.1	1218.5	1219.0	1219.0	1218.5	1218.0	1217.6	1217.1
152.5°	1238.3	1239.1	1239.9	1239.8	1238.8	1237.8	1236.8	1235.9
155°	1266.1	1267.2	1268.4	1268.2	1266.9	1265.6	1264.1	1262.8
157.5°	1290.3	1291.6	1292.9	1292.7	1291.0	1289.3	1287.5	1285.8
160°	1304.0	1305.5	1306.8	1306.7	1305.0	1303.5	1301.9	1300.3
162.5°	1316.6	1318.2	1319.7	1319.7	1318.4	1317.0	1315.6	1314.1
165°	1333.3	1335.1	1337.0	1337.1	1335.5	1333.9	1332.3	1330.8
167.5°	1346.4	1348.2	1350.0	1350.0	1348.2	1346.4	1344.5	1342.7
170°	1353.6	1355.4	1357.3	1357.3	1355.4	1353.6	1351.8	1350.1
172.5°	1358.6	1360.3	1362.1	1362.0	1360.1	1358.1	1356.0	1354.1
175°	1364.3	1365.9	1367.6	1367.5	1365.6	1363.8	1362.0	1360.2
177.5°	1366.5	1368.0	1369.4	1369.3	1367.5	1365.6	1363.8	1362.0
180°	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2

(END OF REPORT)