

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: P332400-840

Luminaire Tested: **S123RDIW-S340D1030U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332400-840
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: S123RDIW-S340D1030U840-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1030 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5477.9 lumens
Efficiency: N/A
Efficacy: 144.2 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Indirect

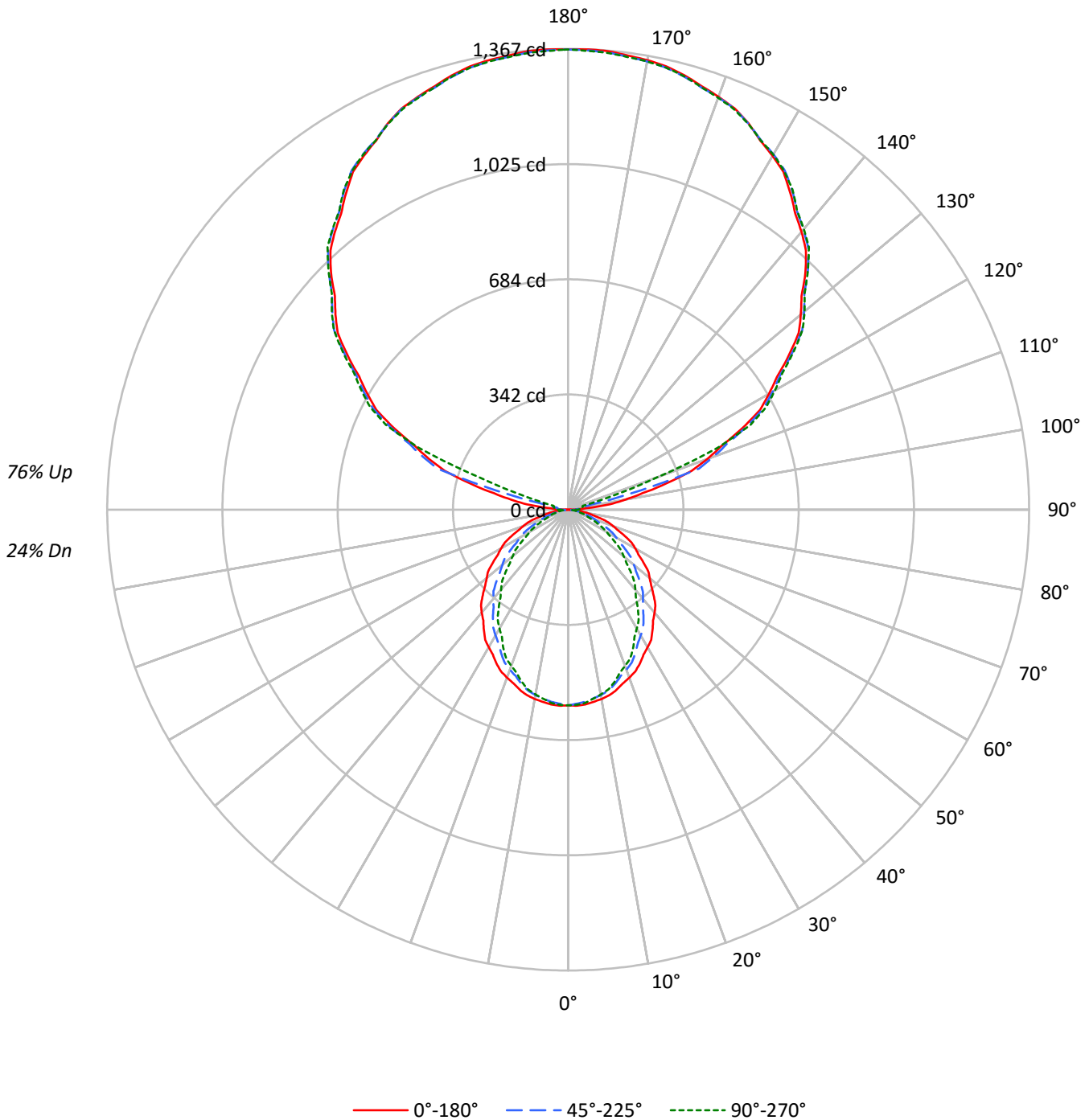
Input Watts (W): 38
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	92	88	84	81	82	78	75	73	60	58	57	44	43	42	29	28	27	20
2	84	77	71	66	74	69	64	60	53	50	47	39	37	35	25	24	23	17
3	77	68	61	55	68	60	55	50	47	43	40	34	32	30	23	21	20	15
4	70	60	52	47	62	54	47	42	42	37	34	31	28	25	20	19	17	13
5	64	53	46	40	57	48	41	36	37	33	29	27	24	22	18	17	15	11
6	59	48	40	34	52	43	36	31	33	29	25	25	22	19	17	15	13	10
7	54	43	35	30	48	38	32	27	30	26	22	22	19	17	15	13	12	9
8	50	39	31	26	45	35	29	24	27	23	20	20	17	15	14	12	11	8
9	47	35	28	23	42	32	26	21	25	21	17	19	16	13	13	11	10	7
10	44	32	25	21	39	29	23	19	23	19	16	17	14	12	12	10	9	7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6245	6245	6245
5°	6269	6183	6218
10°	6233	6105	6084
15°	6167	5962	5899
20°	6074	5783	5648
25°	5980	5583	5404
30°	5854	5351	5059
35°	5727	5119	4742
40°	5606	4846	4350
45°	5451	4576	3997
50°	5280	4270	3600
55°	5104	3920	3232
60°	4943	3546	2827
65°	4735	3140	2420
70°	4472	2634	1954
75°	4092	2075	1838
80°	3645	1841	1692
85°	3075	1618	1507



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	54.5	1.0
10°-20°	151.6	2.8
20°-30°	218.3	4.0
30°-40°	245.9	4.5
40°-50°	235.2	4.3
50°-60°	192.6	3.5
60°-70°	130.0	2.4
70°-80°	65.4	1.2
80°-90°	21.1	0.4
90°-100°	49.6	0.9
100°-110°	236.6	4.3
110°-120°	568.2	10.4
120°-130°	723.6	13.2
130°-140°	773.1	14.1
140°-150°	723.0	13.2
150°-160°	583.2	10.6
160°-170°	376.4	6.9
170°-180°	129.7	2.4
0°-30°	424.3	7.7
0°-40°	670.2	12.2
0°-60°	1098.1	20.0
0°-90°	1314.5	24.0
90°-120°	854.5	15.6
90°-150°	3074.2	56.1
90°-180°	4163.0	76.0
0°-180°	5477.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	580	580	580	580	580	
5°	580	578	572	576	576	55
15°	553	548	535	533	529	156
25°	504	491	470	460	455	231
35°	436	418	390	370	361	273
45°	358	336	301	275	263	276
55°	272	248	209	183	172	244
65°	186	159	123	101	95	184
75°	98	76	50	45	44	105
85°	25	15	13	12	12	28
90°	1	11	24	28	30	4
95°	62	23	31	38	39	76
105°	302	308	222	53	45	320
115°	567	573	582	592	596	560
125°	799	807	811	813	816	714
135°	995	1001	1005	1008	1005	766
145°	1148	1155	1157	1159	1159	718
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°	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2
2.5°	582.1	581.7	581.4	581.1	580.8	580.1	579.1	578.0	577.0	576.0	576.9
5°	580.2	579.7	579.2	578.7	578.0	577.2	575.9	574.7	573.4	572.2	573.1
7.5°	574.8	574.2	573.7	573.1	572.6	571.5	569.9	568.3	566.5	564.9	565.4
10°	570.3	569.6	568.9	568.2	567.3	566.0	564.2	562.3	560.4	558.6	558.7
12.5°	563.9	563.1	562.3	561.5	560.7	559.1	556.7	554.5	552.2	549.9	549.8
15°	553.4	552.2	551.1	549.9	548.8	546.7	543.8	540.9	538.0	535.0	534.5
17.5°	540.1	538.8	537.5	536.0	534.7	532.2	528.5	524.7	521.1	517.4	516.2
20°	530.3	528.7	526.9	525.3	523.6	520.8	516.8	512.8	508.9	504.9	503.5
22.5°	519.4	517.5	515.5	513.6	511.7	508.7	504.4	500.2	495.9	491.7	490.0
25°	503.5	500.9	498.3	495.6	493.0	489.3	484.5	479.7	474.8	470.1	467.9
27.5°	484.2	481.3	478.4	475.5	472.6	468.6	463.2	457.8	452.4	447.1	444.0
30°	471.0	467.9	464.7	461.6	458.5	453.9	448.1	442.2	436.4	430.5	427.0
32.5°	457.9	454.2	450.7	447.2	443.6	438.8	432.5	426.4	420.2	413.9	410.1
35°	435.8	431.9	428.2	424.4	420.7	415.6	409.1	402.5	396.1	389.6	385.2
37.5°	413.3	409.1	405.0	400.8	396.6	391.0	384.2	377.2	370.3	363.3	358.3
40°	399.0	394.5	389.8	385.3	380.6	374.6	367.2	359.7	352.3	344.9	339.5
42.5°	382.8	378.2	373.7	369.0	364.5	358.3	350.6	343.0	335.3	327.6	321.6
45°	358.1	353.4	348.7	344.0	339.2	332.9	324.9	316.8	308.7	300.6	294.7
47.5°	333.4	328.2	323.0	317.8	312.7	306.1	298.0	289.9	282.0	273.9	267.4
50°	315.3	310.3	305.5	300.5	295.6	288.9	280.4	272.0	263.5	255.0	248.5
52.5°	299.1	293.8	288.4	283.1	277.7	270.8	262.5	254.1	245.7	237.3	230.7
55°	272.0	266.8	261.8	256.6	251.5	244.5	235.6	226.7	217.8	208.9	202.9
57.5°	246.9	241.4	235.8	230.1	224.6	217.3	208.4	199.4	190.6	181.7	175.9
60°	229.6	223.9	218.1	212.4	206.6	199.4	190.8	182.1	173.4	164.7	159.1
62.5°	212.3	206.5	200.8	195.1	189.3	182.1	173.4	164.7	156.0	147.3	142.1
65°	185.9	180.2	174.4	168.6	162.9	155.9	147.7	139.6	131.5	123.3	118.2
67.5°	159.5	153.6	147.7	142.0	136.1	129.4	121.5	113.7	105.8	98.1	94.2
70°	142.1	136.4	130.8	125.1	119.6	113.0	105.7	98.4	91.1	83.7	80.1
72.5°	124.8	119.3	113.7	108.1	102.5	96.4	89.8	83.1	76.4	69.8	66.9
75°	98.4	93.3	88.3	83.3	78.3	72.9	67.2	61.4	55.6	49.9	48.9
77.5°	74.2	69.7	65.1	60.6	56.1	52.0	48.3	44.5	40.9	37.2	36.7
80°	58.8	54.5	50.3	45.9	41.7	38.5	36.3	34.0	31.8	29.7	29.3
82.5°	44.1	40.4	36.8	33.0	29.3	27.0	26.0	24.9	23.9	22.8	22.5
85°	24.9	22.6	20.3	18.1	15.8	14.4	14.1	13.8	13.5	13.1	12.9
87.5°	9.2	8.8	8.3	7.9	7.4	7.4	8.0	8.6	9.2	9.8	9.9
90°	1.0	3.2	5.6	7.8	10.0	12.6	15.6	18.5	21.4	24.3	25.2
92.5°	18.9	18.3	17.6	17.0	16.4	17.2	19.4	21.5	23.7	26.0	27.4
95°	61.9	52.6	43.4	34.1	24.9	21.5	24.0	26.5	29.0	31.4	33.0
97.5°	124.3	120.2	116.0	111.9	107.8	97.6	81.4	65.1	48.9	32.6	34.4
100°	171.4	175.9	180.5	184.9	189.5	174.1	139.0	103.8	68.7	33.4	35.2
102.5°	225.0	228.2	231.5	234.7	237.9	220.4	182.0	143.6	105.1	66.8	61.2
105°	302.3	304.8	307.2	309.7	312.1	303.3	283.0	262.7	242.5	222.2	182.3
107.5°	383.8	385.8	387.8	389.8	391.7	394.4	397.6	400.7	403.9	407.2	377.9
110°	438.2	440.0	441.8	443.6	445.4	447.6	450.0	452.5	454.9	457.5	450.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	490.1	491.7	493.3	495.0	496.7	498.7	501.1	503.6	506.1	508.6	508.7
115°	567.0	568.4	569.7	571.1	572.4	574.1	576.1	578.1	580.2	582.2	584.5
117.5°	641.5	643.1	644.8	646.4	648.1	649.4	650.6	651.6	652.6	653.6	655.4
120°	687.7	689.7	691.8	693.8	695.8	697.2	697.8	698.5	699.2	699.8	701.7
122.5°	734.8	736.4	738.1	739.7	741.4	742.7	743.6	744.4	745.3	746.1	747.4
125°	799.3	801.1	802.8	804.7	806.5	807.9	808.7	809.6	810.5	811.4	811.9
127.5°	861.7	863.5	865.4	867.2	869.0	870.4	871.5	872.6	873.6	874.7	875.5
130°	900.7	902.5	904.3	906.2	908.0	909.3	910.2	911.1	912.0	912.9	913.8
132.5°	938.1	939.9	941.6	943.4	945.2	946.5	947.3	948.0	948.7	949.4	950.3
135°	995.0	996.4	997.7	999.1	1000.5	1001.6	1002.5	1003.4	1004.3	1005.2	1005.8
137.5°	1043.7	1045.4	1047.1	1048.8	1050.6	1051.7	1052.2	1052.7	1053.2	1053.7	1054.7
140°	1076.2	1077.5	1078.9	1080.3	1081.6	1082.6	1083.3	1084.0	1084.6	1085.3	1086.2
142.5°	1106.2	1107.5	1108.9	1110.2	1111.7	1112.7	1113.3	1114.0	1114.7	1115.3	1116.1
145°	1148.2	1149.7	1151.3	1153.0	1154.5	1155.5	1156.0	1156.4	1156.9	1157.3	1157.8
147.5°	1187.8	1188.8	1189.8	1190.8	1191.9	1192.7	1193.1	1193.6	1194.0	1194.5	1194.9
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°	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2
2.5°	577.8	578.8	579.8	580.1	580.0	579.8	579.6	579.5
5°	574.1	575.0	575.9	576.3	576.1	575.9	575.7	575.5
7.5°	566.0	566.5	567.0	567.1	566.7	566.4	566.0	565.7
10°	558.8	558.9	559.0	558.8	558.3	557.7	557.1	556.6
12.5°	549.8	549.7	549.7	549.3	548.7	548.1	547.4	546.8
15°	533.9	533.4	532.9	532.3	531.6	530.8	530.1	529.4
17.5°	515.1	514.0	512.9	511.8	510.7	509.6	508.6	507.5
20°	502.2	500.8	499.5	498.2	496.9	495.6	494.4	493.1
22.5°	488.4	486.7	484.9	483.5	482.3	481.2	480.0	478.9
25°	465.6	463.5	461.3	459.6	458.5	457.4	456.2	455.0
27.5°	441.0	438.0	434.9	432.5	430.7	429.0	427.3	425.5
30°	423.4	419.9	416.4	413.7	412.0	410.4	408.7	407.0
32.5°	406.2	402.3	398.4	395.6	393.8	392.1	390.3	388.6
35°	380.6	376.1	371.6	368.4	366.6	364.7	362.7	360.9
37.5°	353.1	348.0	343.0	339.2	336.9	334.6	332.2	329.9
40°	334.1	328.6	323.2	319.2	316.8	314.5	312.0	309.6
42.5°	315.7	309.8	303.9	299.8	297.6	295.5	293.4	291.1
45°	288.7	282.8	276.8	272.6	270.1	267.6	265.1	262.6
47.5°	260.8	254.4	247.9	243.6	241.4	239.1	236.8	234.6
50°	242.1	235.6	229.1	224.7	222.3	219.8	217.4	215.0
52.5°	223.9	217.1	210.5	206.0	203.8	201.7	199.5	197.3
55°	196.8	190.8	184.7	180.6	178.5	176.4	174.3	172.2
57.5°	170.2	164.4	158.8	154.9	153.2	151.4	149.7	147.8
60°	153.4	147.7	142.1	138.4	136.6	134.8	133.1	131.3
62.5°	136.7	131.5	126.1	122.5	120.7	118.9	116.9	115.1
65°	113.0	108.0	102.8	99.7	98.5	97.4	96.2	95.0
67.5°	90.4	86.5	82.7	80.2	79.0	77.8	76.5	75.3
70°	76.4	72.8	69.1	66.8	65.5	64.4	63.2	62.1
72.5°	63.8	60.9	57.9	56.1	55.6	55.1	54.7	54.2
75°	47.8	46.8	45.6	45.0	44.8	44.6	44.4	44.2
77.5°	36.1	35.4	34.9	34.5	34.3	34.1	33.9	33.7
80°	29.0	28.7	28.4	28.2	27.9	27.7	27.5	27.3
82.5°	22.2	21.9	21.6	21.4	21.4	21.3	21.3	21.3
85°	12.7	12.5	12.3	12.2	12.2	12.2	12.2	12.2
87.5°	10.0	10.1	10.1	10.2	10.2	10.2	10.2	10.2
90°	26.2	27.1	28.0	28.6	29.1	29.5	30.0	30.4
92.5°	28.9	30.3	31.7	32.6	32.8	33.1	33.4	33.6
95°	34.6	36.2	37.8	38.6	38.6	38.6	38.6	38.6
97.5°	36.3	38.1	39.9	40.9	41.1	41.3	41.6	41.8
100°	37.1	38.9	40.7	41.7	41.9	42.1	42.4	42.6
102.5°	55.5	50.0	44.3	41.8	42.2	42.6	43.0	43.4
105°	142.4	102.4	62.5	42.8	43.3	43.7	44.1	44.6
107.5°	348.6	319.4	290.1	260.4	230.4	200.4	170.3	140.2
110°	442.6	435.2	427.7	407.9	375.7	343.4	311.1	278.9



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CATALOG NUMBER: S123RDIW-S340D1030U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	508.9	509.0	509.1	505.7	499.0	492.2	485.3	478.6
115°	586.7	589.0	591.3	592.8	593.7	594.6	595.5	596.4
117.5°	657.2	659.0	660.9	661.9	662.0	662.2	662.4	662.6
120°	703.5	705.3	707.1	708.0	708.0	708.0	708.0	708.0
122.5°	748.6	749.9	751.1	751.9	752.0	752.2	752.5	752.7
125°	812.3	812.8	813.2	813.7	814.2	814.6	815.1	815.5
127.5°	876.2	876.9	877.7	877.8	877.3	876.9	876.5	876.0
130°	914.7	915.5	916.5	916.8	916.3	915.8	915.3	914.9
132.5°	951.2	952.1	953.0	953.1	952.5	951.9	951.3	950.6
135°	1006.5	1007.2	1007.8	1007.8	1007.2	1006.5	1005.8	1005.2
137.5°	1055.8	1056.9	1058.0	1058.3	1057.8	1057.4	1056.9	1056.5
140°	1087.1	1088.0	1088.9	1089.1	1088.7	1088.2	1087.8	1087.3
142.5°	1116.8	1117.5	1118.2	1118.2	1117.6	1117.0	1116.4	1115.7
145°	1158.2	1158.7	1159.1	1159.3	1159.3	1159.3	1159.3	1159.3
147.5°	1195.4	1195.8	1196.3	1196.0	1195.0	1193.9	1192.9	1191.8
150°	1218.1	1218.5	1219.0	1218.9	1218.2	1217.5	1216.9	1216.2
152.5°	1238.3	1239.1	1239.9	1239.8	1238.7	1237.7	1236.7	1235.7
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)