

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: P332112

Luminaire Tested: **S123DIW-S340D1320U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332112
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-S340D1320U835-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6692.8 lumens
Efficiency: N/A
Efficacy: 143.6 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Indirect

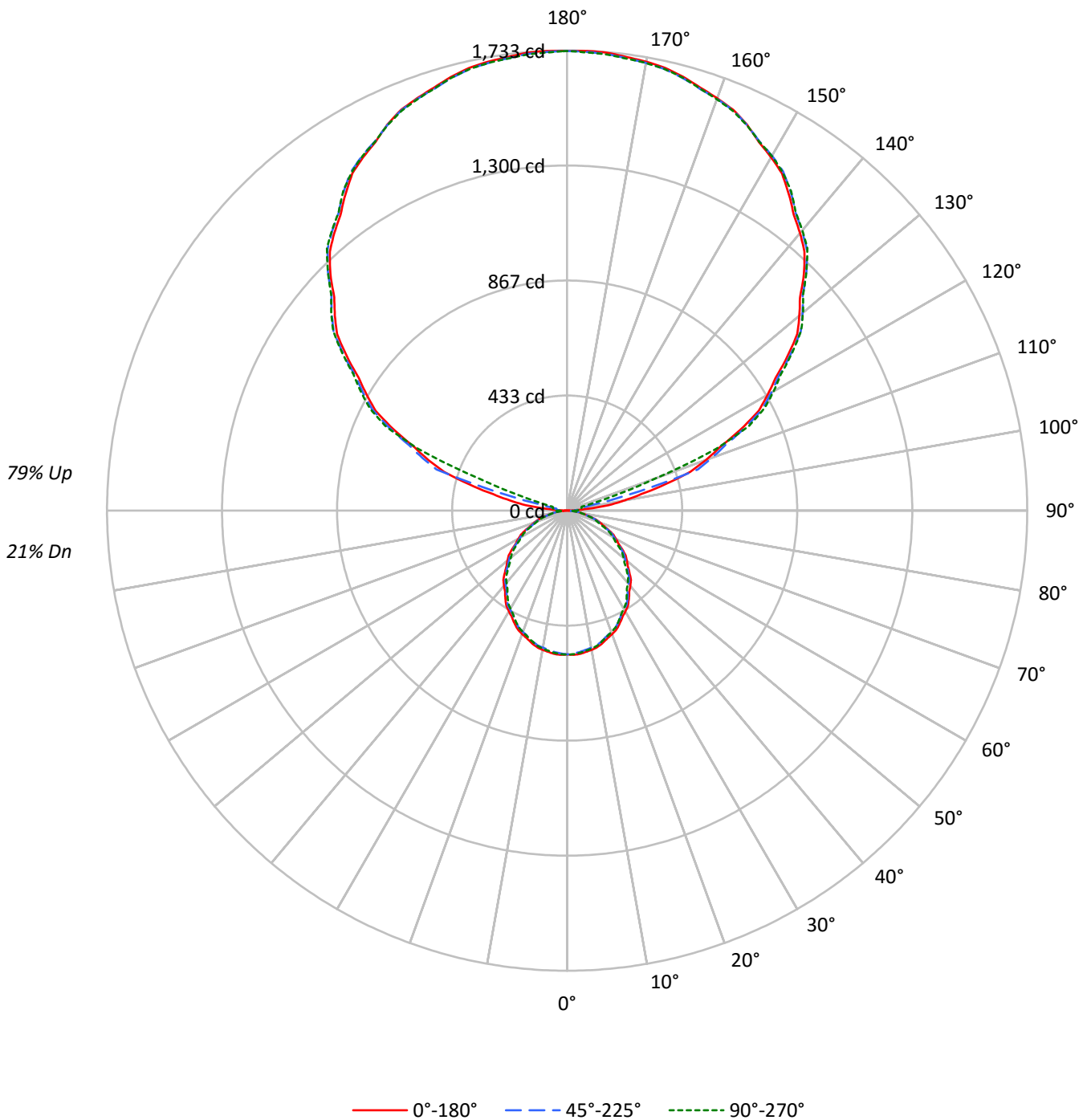
Input Watts (W): 46.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	89	89	89	89	67	67	67	48	48	48	30	30	30	21
1	91	87	83	80	81	77	74	71	59	57	55	42	41	39	26	25	25	18
2	83	76	70	65	73	67	63	58	51	48	45	37	35	33	23	22	21	15
3	76	67	60	54	67	59	53	49	45	41	38	32	30	28	20	19	18	13
4	69	59	51	46	61	52	46	41	40	36	32	29	26	24	18	17	15	11
5	63	52	45	39	56	47	40	35	36	31	28	26	23	20	16	15	13	9
6	58	47	39	33	51	42	35	30	32	27	24	23	20	18	15	13	12	8
7	54	42	34	29	47	37	31	26	29	24	21	21	18	16	13	12	10	7
8	50	38	31	25	44	34	27	23	26	22	18	19	16	14	12	10	9	6
9	46	34	27	22	41	31	25	20	24	19	16	17	14	12	11	9	8	6
10	43	31	25	20	38	28	22	18	22	18	15	16	13	11	10	9	7	5

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5833	5833	5833
5°	5861	5780	5820
10°	5821	5729	5766
15°	5753	5665	5675
20°	5674	5573	5577
25°	5567	5462	5451
30°	5450	5340	5299
35°	5327	5210	5143
40°	5199	5067	4990
45°	5057	4937	4816
50°	4915	4776	4642
55°	4731	4609	4468
60°	4545	4413	4273
65°	4378	4200	4070
70°	4135	3959	3783
75°	3780	3643	3489
80°	3409	3267	3236
85°	2989	2878	2766



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	51.0	0.8
10°-20°	144.1	2.2
20°-30°	212.9	3.2
30°-40°	248.7	3.7
40°-50°	250.0	3.7
50°-60°	219.6	3.3
60°-70°	163.6	2.4
70°-80°	93.2	1.4
80°-90°	31.6	0.5
90°-100°	62.9	0.9
100°-110°	299.9	4.5
110°-120°	720.3	10.8
120°-130°	917.3	13.7
130°-140°	980.1	14.6
140°-150°	916.5	13.7
150°-160°	739.3	11.0
160°-170°	477.1	7.1
170°-180°	164.4	2.5
0°-30°	408.1	6.1
0°-40°	656.8	9.8
0°-60°	1126.5	16.8
0°-90°	1414.9	21.1
90°-120°	1083.2	16.2
90°-150°	3897.1	58.2
90°-180°	5278.0	78.9
0°-180°	6692.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	542	542	542	542	542	
5°	542	540	535	539	539	51
15°	516	514	508	512	509	145
25°	469	466	460	460	459	216
35°	405	402	396	394	391	254
45°	332	330	324	319	316	256
55°	252	251	246	241	238	226
65°	172	170	165	161	160	170
75°	91	89	88	85	84	97
85°	24	23	23	22	22	27
90°	1	14	31	36	39	5
95°	78	29	40	48	49	97
105°	383	390	282	67	57	406
115°	719	727	738	750	756	709
125°	1013	1023	1029	1031	1034	905
135°	1261	1269	1274	1278	1274	971
145°	1456	1464	1467	1470	1470	911
155°	1603	1601	1602	1608	1601	738
165°	1691	1687	1686	1695	1687	478
175°	1731	1725	1726	1734	1724	165
180°	1731	1731	1731	1731	1731	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9
2.5°	543.8	543.4	543.1	542.8	542.4	541.8	540.9	540.0	539.1	538.2	539.0
5°	542.4	541.8	541.3	540.8	540.3	539.5	538.3	537.2	536.0	534.9	535.9
7.5°	537.1	536.5	536.0	535.5	535.0	534.1	533.0	531.8	530.6	529.4	530.3
10°	532.6	532.1	531.5	531.0	530.5	529.6	528.2	526.9	525.5	524.2	525.1
12.5°	526.6	526.2	525.7	525.3	524.9	524.0	522.8	521.5	520.2	519.0	519.7
15°	516.3	515.9	515.4	515.0	514.6	513.7	512.4	511.0	509.7	508.4	509.2
17.5°	504.2	503.7	503.2	502.6	502.1	501.2	499.8	498.5	497.1	495.8	496.3
20°	495.3	494.7	494.1	493.4	492.8	491.8	490.5	489.1	487.8	486.5	486.9
22.5°	485.2	484.6	484.0	483.4	482.8	481.8	480.4	479.1	477.7	476.4	476.7
25°	468.7	468.1	467.5	466.9	466.3	465.3	463.9	462.6	461.2	459.9	460.0
27.5°	451.1	450.5	449.9	449.3	448.7	447.7	446.3	444.8	443.4	441.9	442.0
30°	438.5	437.9	437.4	436.9	436.4	435.4	434.0	432.5	431.1	429.6	429.6
32.5°	425.8	425.1	424.4	423.7	423.1	422.1	421.0	419.9	418.8	417.7	417.1
35°	405.4	404.8	404.1	403.5	402.9	401.9	400.6	399.2	397.9	396.5	395.9
37.5°	384.5	383.7	382.9	382.1	381.4	380.3	378.9	377.5	376.2	374.8	374.1
40°	370.0	369.3	368.7	368.1	367.5	366.4	365.0	363.5	362.1	360.6	359.8
42.5°	355.4	354.7	354.0	353.3	352.6	351.5	350.1	348.6	347.2	345.7	344.9
45°	332.2	331.8	331.4	331.0	330.6	329.7	328.3	327.0	325.6	324.3	323.1
47.5°	309.2	308.6	308.0	307.4	306.8	305.9	304.6	303.3	302.1	300.8	299.6
50°	293.5	293.0	292.5	292.0	291.5	290.5	289.2	287.9	286.5	285.2	284.0
52.5°	277.1	276.8	276.4	276.1	275.7	274.8	273.4	272.0	270.6	269.1	268.2
55°	252.1	252.0	251.9	251.8	251.7	250.9	249.6	248.2	246.9	245.6	244.4
57.5°	228.2	227.9	227.5	227.2	226.8	226.1	225.0	223.9	222.9	221.8	220.8
60°	211.1	211.0	210.9	210.8	210.7	210.0	208.7	207.5	206.3	205.0	204.1
62.5°	195.8	195.5	195.3	195.0	194.7	194.0	192.7	191.5	190.2	189.0	188.1
65°	171.9	171.4	170.9	170.4	169.9	169.1	168.1	167.0	166.0	164.9	164.1
67.5°	146.7	146.2	145.8	145.3	144.9	144.2	143.5	142.7	141.9	141.1	140.4
70°	131.4	130.8	130.2	129.5	128.9	128.3	127.7	127.0	126.4	125.8	125.1
72.5°	115.4	114.9	114.5	114.0	113.5	113.0	112.3	111.6	110.9	110.2	109.5
75°	90.9	90.4	90.0	89.6	89.2	88.8	88.5	88.2	87.9	87.6	87.1
77.5°	69.1	68.9	68.7	68.5	68.2	67.9	67.6	67.2	66.8	66.4	66.1
80°	55.0	54.7	54.4	54.1	53.7	53.5	53.3	53.1	52.9	52.7	52.5
82.5°	41.2	41.1	41.1	41.0	40.9	40.9	40.8	40.8	40.8	40.7	40.5
85°	24.2	24.0	23.8	23.6	23.4	23.3	23.3	23.3	23.3	23.3	23.1
87.5°	9.9	10.3	10.6	10.9	11.2	11.7	12.4	13.1	13.7	14.4	14.5
90°	1.3	4.1	7.0	9.9	12.7	16.0	19.7	23.4	27.1	30.9	32.0
92.5°	23.9	23.1	22.3	21.5	20.7	21.7	24.5	27.3	30.1	32.9	34.7
95°	78.4	66.7	55.0	43.3	31.6	27.3	30.4	33.6	36.7	39.9	41.9
97.5°	157.6	152.4	147.1	141.9	136.6	123.7	103.1	82.6	62.0	41.4	43.7
100°	217.3	223.0	228.7	234.4	240.2	220.7	176.2	131.6	87.0	42.4	44.7
102.5°	285.2	289.3	293.4	297.5	301.7	279.4	230.7	182.0	133.3	84.6	77.5
105°	383.2	386.3	389.5	392.6	395.7	384.5	358.7	333.0	307.3	281.6	231.0
107.5°	486.6	489.1	491.6	494.1	496.6	499.9	504.0	508.0	512.1	516.1	479.0
110°	555.5	557.8	560.0	562.3	564.6	567.3	570.5	573.6	576.8	579.9	570.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	621.3	623.4	625.4	627.5	629.5	632.1	635.3	638.4	641.6	644.7	644.9
115°	718.8	720.5	722.2	723.9	725.6	727.8	730.3	732.9	735.5	738.1	740.9
117.5°	813.2	815.3	817.4	819.5	821.6	823.3	824.6	826.0	827.3	828.6	830.9
120°	871.8	874.4	876.9	879.5	882.1	883.8	884.6	885.5	886.4	887.2	889.5
122.5°	931.5	933.6	935.7	937.8	939.9	941.5	942.6	943.7	944.8	945.9	947.5
125°	1013.2	1015.5	1017.8	1020.1	1022.4	1024.1	1025.2	1026.4	1027.5	1028.7	1029.2
127.5°	1092.4	1094.7	1097.0	1099.3	1101.6	1103.4	1104.8	1106.2	1107.5	1108.9	1109.8
130°	1141.8	1144.1	1146.4	1148.7	1151.0	1152.7	1153.8	1155.0	1156.1	1157.2	1158.4
132.5°	1189.1	1191.4	1193.7	1196.0	1198.3	1199.9	1200.8	1201.7	1202.6	1203.5	1204.7
135°	1261.4	1263.1	1264.8	1266.5	1268.3	1269.7	1270.8	1272.0	1273.1	1274.3	1275.1
137.5°	1323.1	1325.3	1327.5	1329.6	1331.8	1333.2	1333.8	1334.5	1335.1	1335.7	1337.1
140°	1364.3	1366.0	1367.7	1369.4	1371.1	1372.4	1373.3	1374.1	1375.0	1375.8	1377.0
142.5°	1402.3	1404.0	1405.8	1407.5	1409.2	1410.5	1411.3	1412.2	1413.0	1413.9	1414.8
145°	1455.6	1457.6	1459.6	1461.6	1463.6	1464.8	1465.4	1466.0	1466.6	1467.1	1467.7
147.5°	1505.7	1507.0	1508.3	1509.6	1511.0	1511.9	1512.5	1513.0	1513.6	1514.2	1514.8
150°	1536.6	1537.4	1538.3	1539.1	1540.0	1540.7	1541.3	1541.8	1542.4	1543.0	1543.6
152.5°	1564.3	1564.7	1565.1	1565.5	1565.9	1566.3	1566.7	1567.0	1567.3	1567.7	1568.7
155°	1603.4	1602.9	1602.3	1601.7	1601.1	1601.0	1601.3	1601.6	1601.9	1602.1	1603.6
157.5°	1633.8	1633.7	1633.7	1633.6	1633.5	1633.4	1633.1	1632.8	1632.5	1632.2	1633.9
160°	1652.3	1652.0	1651.7	1651.4	1651.1	1650.9	1650.6	1650.3	1650.0	1649.7	1651.4
162.5°	1669.8	1669.0	1668.3	1667.5	1666.8	1666.3	1666.0	1665.7	1665.4	1665.1	1667.1
165°	1690.9	1690.0	1689.1	1688.3	1687.4	1686.9	1686.6	1686.3	1686.0	1685.7	1688.0
167.5°	1707.3	1706.2	1705.0	1703.9	1702.7	1702.2	1702.2	1702.2	1702.2	1702.2	1704.5
170°	1716.6	1715.4	1714.3	1713.2	1712.0	1711.4	1711.4	1711.4	1711.4	1711.4	1713.7
172.5°	1722.8	1721.4	1720.0	1718.6	1717.3	1716.7	1716.9	1717.2	1717.4	1717.6	1719.9
175°	1730.7	1729.3	1727.9	1726.4	1725.0	1724.4	1724.7	1725.0	1725.3	1725.6	1727.6
177.5°	1732.8	1731.6	1730.5	1729.4	1728.2	1727.8	1728.0	1728.2	1728.4	1728.7	1730.5
180°	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9
2.5°	539.8	540.7	541.5	541.9	541.8	541.7	541.6	541.5
5°	537.0	538.0	539.1	539.5	539.3	539.1	538.8	538.6
7.5°	531.3	532.2	533.1	533.5	533.4	533.3	533.2	533.0
10°	526.1	527.0	527.9	528.3	528.1	527.9	527.7	527.5
12.5°	520.3	521.0	521.7	522.0	521.9	521.7	521.6	521.5
15°	510.0	510.8	511.7	511.8	511.1	510.5	509.9	509.3
17.5°	496.9	497.5	498.1	498.3	498.0	497.8	497.6	497.4
20°	487.3	487.7	488.1	488.2	487.8	487.5	487.2	486.9
22.5°	477.0	477.4	477.7	477.7	477.3	476.9	476.5	476.1
25°	460.1	460.2	460.3	460.2	459.9	459.6	459.3	459.0
27.5°	442.1	442.2	442.2	442.1	441.7	441.3	440.9	440.5
30°	429.6	429.6	429.6	429.2	428.5	427.8	427.1	426.3
32.5°	416.5	415.9	415.4	414.9	414.5	414.1	413.7	413.3
35°	395.3	394.7	394.0	393.5	393.0	392.4	391.9	391.4
37.5°	373.3	372.6	371.8	371.3	371.0	370.6	370.3	370.0
40°	359.0	358.2	357.3	356.7	356.3	355.9	355.5	355.1
42.5°	344.1	343.2	342.4	341.8	341.4	341.0	340.6	340.1
45°	321.8	320.6	319.3	318.5	317.9	317.4	316.9	316.4
47.5°	298.4	297.2	295.9	295.1	294.6	294.2	293.7	293.3
50°	282.9	281.7	280.6	279.7	279.1	278.5	277.9	277.2
52.5°	267.2	266.2	265.2	264.4	263.8	263.2	262.6	262.0
55°	243.3	242.1	241.0	240.2	239.7	239.1	238.6	238.1
57.5°	219.8	218.7	217.7	216.9	216.3	215.7	215.1	214.5
60°	203.2	202.2	201.3	200.6	200.0	199.5	199.0	198.5
62.5°	187.1	186.2	185.3	184.6	184.3	183.9	183.6	183.2
65°	163.3	162.5	161.6	161.1	160.8	160.4	160.1	159.8
67.5°	139.6	138.9	138.2	137.6	137.2	136.7	136.3	135.9
70°	124.4	123.6	122.9	122.3	121.8	121.3	120.7	120.2
72.5°	108.9	108.2	107.6	107.1	106.9	106.6	106.3	106.0
75°	86.6	86.0	85.5	85.1	84.8	84.5	84.2	83.9
77.5°	65.7	65.4	65.0	64.9	64.9	64.9	64.9	64.9
80°	52.4	52.3	52.2	52.2	52.2	52.2	52.2	52.2
82.5°	40.4	40.2	40.0	39.8	39.8	39.7	39.6	39.5
85°	22.9	22.7	22.5	22.4	22.4	22.4	22.4	22.4
87.5°	14.7	14.8	15.0	15.1	15.2	15.3	15.4	15.5
90°	33.1	34.3	35.4	36.3	36.9	37.4	38.0	38.6
92.5°	36.6	38.4	40.2	41.3	41.7	42.0	42.3	42.7
95°	43.9	45.9	47.9	48.9	48.9	48.9	48.9	48.9
97.5°	46.0	48.3	50.5	51.8	52.1	52.4	52.7	53.0
100°	47.0	49.3	51.6	52.9	53.1	53.4	53.7	54.0
102.5°	70.4	63.3	56.3	53.0	53.5	54.0	54.5	55.0
105°	180.4	129.9	79.3	54.3	54.9	55.4	56.0	56.6
107.5°	442.0	404.9	367.8	330.2	292.1	253.9	215.8	177.7
110°	561.0	551.6	542.2	517.0	476.2	435.3	394.5	353.6



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CATALOG NUMBER: S123DIW-S340D1320U835-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	645.1	645.2	645.4	641.2	632.5	623.9	615.3	606.7
115°	743.8	746.6	749.5	751.5	752.6	753.8	754.9	756.1
117.5°	833.2	835.4	837.7	839.0	839.2	839.4	839.7	839.9
120°	891.8	894.1	896.4	897.5	897.5	897.5	897.5	897.5
122.5°	949.1	950.7	952.3	953.2	953.4	953.6	953.9	954.1
125°	1029.8	1030.4	1030.9	1031.5	1032.1	1032.7	1033.2	1033.8
127.5°	1110.7	1111.6	1112.6	1112.7	1112.2	1111.6	1111.0	1110.4
130°	1159.5	1160.7	1161.8	1162.1	1161.5	1161.0	1160.4	1159.8
132.5°	1205.8	1207.0	1208.1	1208.3	1207.5	1206.7	1205.9	1205.1
135°	1276.0	1276.8	1277.7	1277.7	1276.8	1276.0	1275.1	1274.3
137.5°	1338.5	1339.8	1341.2	1341.6	1341.0	1340.5	1339.9	1339.3
140°	1378.1	1379.3	1380.4	1380.7	1380.1	1379.5	1379.0	1378.4
142.5°	1415.7	1416.6	1417.6	1417.6	1416.8	1416.0	1415.2	1414.4
145°	1468.3	1468.8	1469.4	1469.7	1469.7	1469.7	1469.7	1469.7
147.5°	1515.3	1515.9	1516.5	1516.1	1514.8	1513.5	1512.2	1510.8
150°	1544.1	1544.7	1545.3	1545.1	1544.3	1543.4	1542.6	1541.7
152.5°	1569.7	1570.8	1571.8	1571.7	1570.3	1569.0	1567.7	1566.4
155°	1605.0	1606.4	1607.9	1607.7	1606.0	1604.3	1602.6	1600.9
157.5°	1635.7	1637.4	1639.1	1638.8	1636.6	1634.4	1632.1	1629.9
160°	1653.1	1654.9	1656.6	1656.4	1654.4	1652.4	1650.4	1648.4
162.5°	1669.0	1671.0	1672.9	1673.0	1671.2	1669.5	1667.7	1665.9
165°	1690.3	1692.6	1694.9	1695.0	1693.0	1691.0	1689.0	1687.0
167.5°	1706.8	1709.0	1711.3	1711.3	1709.0	1706.8	1704.5	1702.2
170°	1716.0	1718.3	1720.6	1720.6	1718.3	1716.0	1713.7	1711.4
172.5°	1722.2	1724.5	1726.8	1726.6	1724.1	1721.6	1719.1	1716.6
175°	1729.6	1731.6	1733.6	1733.4	1731.2	1728.9	1726.6	1724.3
177.5°	1732.3	1734.2	1736.0	1735.8	1733.5	1731.2	1728.9	1726.6
180°	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7

(END OF REPORT)