

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: P332119-927

Luminaire Tested: **S123DIW-S340D1535U927-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332119-927  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S340D1535U927-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5334.8 lumens  
Efficiency: N/A  
Efficacy: 99.9 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

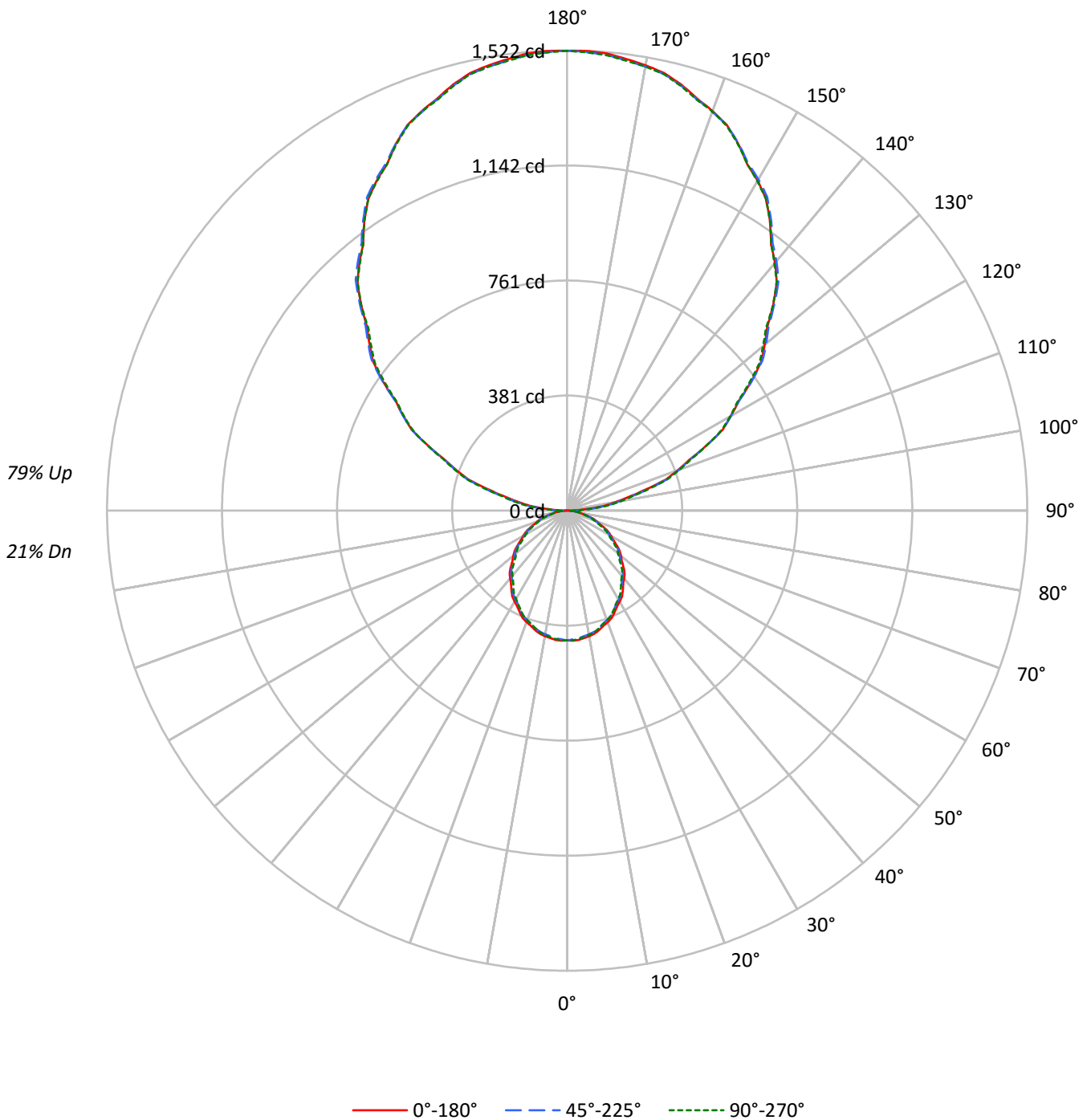
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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	40	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	12
4	69	59	51	46	61	52	46	41	40	36	32	29	26	24	18	16	15	11
5	63	52	45	39	56	46	40	35	36	31	28	26	23	20	16	14	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	15	13	12	10	7
8	50	38	30	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	24	20	38	28	22	18	22	17	14	16	13	11	10	9	7	5

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4621	4621	4621
5°	4643	4578	4611
10°	4611	4539	4568
15°	4558	4488	4496
20°	4495	4415	4418
25°	4410	4327	4318
30°	4318	4230	4197
35°	4221	4127	4075
40°	4118	4014	3953
45°	4007	3911	3815
50°	3893	3783	3677
55°	3748	3652	3539
60°	3599	3496	3384
65°	3469	3326	3224
70°	3276	3138	2996
75°	2994	2886	2766
80°	2703	2585	2566
85°	2371	2285	2186



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	40.4	0.8
10°-20°	114.2	2.1
20°-30°	168.7	3.2
30°-40°	197.0	3.7
40°-50°	198.1	3.7
50°-60°	174.0	3.3
60°-70°	129.6	2.4
70°-80°	73.8	1.4
80°-90°	25.7	0.5
90°-100°	99.1	1.9
100°-110°	296.5	5.6
110°-120°	504.3	9.5
120°-130°	663.4	12.4
130°-140°	745.6	14.0
140°-150°	732.9	13.7
150°-160°	617.0	11.6
160°-170°	410.7	7.7
170°-180°	143.8	2.7
0°-30°	323.3	6.1
0°-40°	520.3	9.8
0°-60°	892.4	16.7
0°-90°	1121.5	21.0
90°-120°	899.9	16.9
90°-150°	3041.8	57.0
90°-180°	4213.0	79.0
0°-180°	5334.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	429	429	429	429	429	
5°	430	428	424	427	427	41
15°	409	407	403	405	404	115
25°	371	369	364	365	364	171
35°	321	319	314	312	310	201
45°	263	262	257	253	251	203
55°	200	199	195	191	189	179
65°	136	134	131	128	127	134
75°	72	70	69	68	66	77
85°	19	18	18	18	18	21
90°	1	13	29	33	36	5
95°	70	79	88	93	93	79
105°	269	272	282	282	284	288
115°	508	511	509	510	509	502
125°	743	746	744	739	735	662
135°	964	971	970	965	963	743
145°	1170	1172	1175	1174	1170	730
155°	1339	1339	1340	1344	1337	616
165°	1459	1455	1455	1461	1454	411
175°	1517	1513	1512	1519	1511	144
180°	1521	1521	1521	1521	1521	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	429.3	429.3	429.3	429.3	429.3	429.3	429.3	429.3	429.3	429.3	429.3
2.5°	430.8	430.5	430.2	430.0	429.7	429.2	428.5	427.8	427.1	426.4	427.0
5°	429.7	429.2	428.8	428.4	428.0	427.4	426.4	425.6	424.6	423.7	424.5
7.5°	425.5	425.0	424.6	424.2	423.8	423.1	422.2	421.3	420.3	419.4	420.1
10°	421.9	421.5	421.0	420.6	420.3	419.5	418.4	417.4	416.3	415.3	416.0
12.5°	417.2	416.8	416.5	416.1	415.8	415.1	414.2	413.1	412.1	411.1	411.7
15°	409.0	408.7	408.3	408.0	407.7	406.9	405.9	404.8	403.8	402.7	403.4
17.5°	399.4	399.0	398.6	398.2	397.8	397.0	395.9	394.9	393.8	392.8	393.2
20°	392.4	391.9	391.4	390.9	390.4	389.6	388.6	387.5	386.4	385.4	385.7
22.5°	384.4	383.9	383.4	382.9	382.5	381.7	380.6	379.5	378.4	377.4	377.6
25°	371.3	370.8	370.3	369.9	369.4	368.6	367.5	366.5	365.4	364.3	364.4
27.5°	357.4	356.9	356.4	355.9	355.5	354.7	353.6	352.4	351.3	350.1	350.1
30°	347.4	346.9	346.5	346.1	345.7	344.9	343.8	342.6	341.5	340.3	340.3
32.5°	337.3	336.8	336.2	335.6	335.2	334.4	333.5	332.6	331.8	330.9	330.4
35°	321.2	320.7	320.1	319.6	319.2	318.4	317.3	316.2	315.2	314.1	313.6
37.5°	304.6	304.0	303.3	302.7	302.1	301.3	300.2	299.0	298.0	296.9	296.4
40°	293.1	292.6	292.1	291.6	291.1	290.3	289.1	288.0	286.8	285.7	285.0
42.5°	281.5	281.0	280.4	279.9	279.3	278.5	277.3	276.2	275.0	273.9	273.2
45°	263.2	262.8	262.5	262.2	261.9	261.2	260.1	259.0	257.9	256.9	256.0
47.5°	244.9	244.5	244.0	243.5	243.0	242.3	241.3	240.3	239.3	238.3	237.3
50°	232.5	232.1	231.7	231.3	230.9	230.1	229.1	228.1	227.0	225.9	225.0
52.5°	219.5	219.3	219.0	218.7	218.4	217.7	216.6	215.5	214.4	213.2	212.5
55°	199.7	199.6	199.6	199.5	199.4	198.8	197.7	196.6	195.6	194.6	193.6
57.5°	180.8	180.5	180.2	180.0	179.7	179.1	178.2	177.4	176.6	175.7	174.9
60°	167.2	167.2	167.1	167.0	166.9	166.4	165.3	164.4	163.4	162.4	161.7
62.5°	155.1	154.9	154.7	154.5	154.2	153.7	152.7	151.7	150.7	149.7	149.0
65°	136.2	135.8	135.4	135.0	134.6	134.0	133.2	132.3	131.5	130.6	130.0
67.5°	116.2	115.8	115.5	115.1	114.8	114.2	113.7	113.0	112.4	111.8	111.2
70°	104.1	103.6	103.1	102.6	102.1	101.6	101.2	100.6	100.1	99.7	99.1
72.5°	91.4	91.0	90.7	90.3	89.9	89.5	89.0	88.4	87.9	87.3	86.7
75°	72.0	71.6	71.3	71.0	70.7	70.3	70.1	69.9	69.6	69.4	69.0
77.5°	54.7	54.6	54.4	54.3	54.0	53.8	53.6	53.2	52.9	52.6	52.4
80°	43.6	43.3	43.1	42.9	42.5	42.4	42.2	42.1	41.9	41.7	41.6
82.5°	32.6	32.6	32.6	32.5	32.4	32.4	32.3	32.3	32.3	32.2	32.1
85°	19.2	19.0	18.9	18.7	18.5	18.5	18.5	18.5	18.5	18.5	18.3
87.5°	7.9	8.2	8.6	9.0	9.3	9.7	10.4	11.0	11.6	12.2	12.4
90°	1.2	3.9	6.5	9.2	11.8	14.9	18.3	21.8	25.2	28.7	29.7
92.5°	28.9	30.7	32.5	34.3	36.1	38.0	40.0	41.9	43.9	45.9	46.7
95°	70.5	72.3	74.2	76.0	78.0	79.9	82.0	84.1	86.3	88.4	89.4
97.5°	125.2	126.6	127.9	129.4	130.7	132.1	133.7	135.2	136.8	138.3	139.6
100°	162.5	164.1	165.6	167.2	168.8	170.3	171.6	172.9	174.3	175.6	176.4
102.5°	205.5	206.4	207.4	208.3	209.3	210.6	212.4	214.1	215.9	217.6	218.5
105°	268.8	269.3	269.8	270.4	270.9	272.4	274.7	277.1	279.6	281.9	281.9
107.5°	342.4	342.7	343.0	343.3	343.6	344.3	345.2	346.2	347.1	348.1	349.0
110°	388.2	388.8	389.3	389.8	390.4	390.9	391.4	392.0	392.4	393.0	394.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	436.0	436.3	436.7	437.0	437.3	437.5	437.6	437.7	437.8	437.9	439.2
115°	507.7	508.5	509.3	510.1	510.9	511.0	510.5	509.9	509.5	508.9	509.1
117.5°	579.9	580.4	580.9	581.5	581.9	581.9	581.2	580.5	579.8	579.2	579.1
120°	624.8	626.4	628.0	629.5	631.1	631.3	629.9	628.6	627.2	626.0	625.7
122.5°	671.6	672.7	673.9	675.1	676.3	676.5	675.8	675.1	674.5	673.8	673.0
125°	743.0	743.8	744.7	745.4	746.2	746.3	745.8	745.3	744.7	744.3	743.1
127.5°	809.0	810.6	812.4	814.0	815.8	816.3	815.7	815.2	814.6	814.0	812.5
130°	852.9	855.1	857.1	859.3	861.4	862.1	861.3	860.5	859.7	858.9	857.9
132.5°	896.9	899.0	901.1	903.2	905.4	906.2	905.5	905.0	904.4	903.8	902.5
135°	964.0	965.6	967.2	968.8	970.4	971.1	970.8	970.5	970.3	970.0	968.9
137.5°	1026.1	1027.5	1028.8	1030.2	1031.4	1032.5	1033.2	1033.8	1034.5	1035.2	1034.1
140°	1069.1	1070.5	1071.8	1073.1	1074.4	1075.2	1075.5	1075.8	1076.0	1076.3	1076.0
142.5°	1108.3	1109.6	1111.0	1112.3	1113.6	1114.5	1115.0	1115.5	1115.9	1116.4	1116.2
145°	1169.5	1170.1	1170.5	1171.1	1171.6	1172.3	1173.1	1173.9	1174.6	1175.4	1175.2
147.5°	1223.0	1223.9	1224.9	1225.9	1226.9	1227.6	1228.4	1229.2	1229.9	1230.7	1230.7
150°	1260.3	1260.8	1261.3	1261.9	1262.4	1262.9	1263.5	1264.0	1264.5	1265.0	1265.0
152.5°	1290.9	1291.6	1292.4	1293.1	1293.8	1294.3	1294.7	1295.0	1295.3	1295.6	1296.1
155°	1339.1	1339.1	1339.1	1339.1	1339.1	1339.3	1339.5	1339.7	1340.1	1340.3	1341.4
157.5°	1380.2	1379.9	1379.6	1379.3	1379.0	1378.9	1379.1	1379.3	1379.5	1379.7	1380.9
160°	1406.0	1405.5	1404.9	1404.4	1403.9	1403.6	1403.6	1403.6	1403.6	1403.6	1404.9
162.5°	1428.9	1428.2	1427.4	1426.7	1426.0	1425.7	1425.9	1426.2	1426.3	1426.6	1427.9
165°	1458.6	1457.8	1457.0	1456.2	1455.4	1455.0	1455.0	1455.0	1455.0	1455.0	1456.6
167.5°	1482.3	1481.1	1480.1	1479.0	1478.0	1477.6	1477.7	1478.0	1478.2	1478.4	1480.0
170°	1495.6	1494.5	1493.5	1492.4	1491.4	1490.8	1490.8	1490.8	1490.8	1490.8	1492.7
172.5°	1506.1	1505.1	1504.0	1502.9	1501.9	1501.3	1501.3	1501.3	1501.3	1501.3	1503.0
175°	1517.1	1516.1	1515.0	1513.9	1512.8	1512.4	1512.4	1512.4	1512.4	1512.4	1513.9
177.5°	1521.6	1520.8	1520.0	1519.1	1518.2	1517.8	1517.8	1517.8	1517.8	1517.8	1519.1
180°	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	429.3	429.3	429.3	429.3	429.3	429.3	429.3	429.3
2.5°	427.6	428.3	429.0	429.3	429.2	429.1	429.0	429.0
5°	425.4	426.2	427.1	427.4	427.2	427.1	426.8	426.7
7.5°	420.9	421.6	422.3	422.6	422.6	422.5	422.4	422.2
10°	416.8	417.5	418.2	418.5	418.4	418.2	418.0	417.9
12.5°	412.2	412.7	413.3	413.5	413.4	413.3	413.2	413.1
15°	404.0	404.6	405.4	405.4	404.9	404.4	403.9	403.5
17.5°	393.6	394.1	394.6	394.7	394.5	394.3	394.2	394.0
20°	386.0	386.3	386.7	386.7	386.4	386.2	386.0	385.7
22.5°	377.9	378.2	378.4	378.4	378.1	377.8	377.5	377.2
25°	364.5	364.6	364.6	364.6	364.3	364.1	363.8	363.6
27.5°	350.2	350.3	350.3	350.2	349.9	349.6	349.3	349.0
30°	340.3	340.3	340.3	340.0	339.5	338.9	338.3	337.7
32.5°	329.9	329.5	329.1	328.7	328.4	328.0	327.7	327.4
35°	313.1	312.7	312.1	311.7	311.3	310.9	310.5	310.1
37.5°	295.7	295.2	294.5	294.1	293.9	293.6	293.3	293.1
40°	284.4	283.8	283.0	282.6	282.3	281.9	281.6	281.3
42.5°	272.6	271.9	271.2	270.8	270.5	270.1	269.8	269.4
45°	254.9	254.0	252.9	252.3	251.8	251.4	251.0	250.6
47.5°	236.4	235.4	234.4	233.8	233.4	233.1	232.7	232.3
50°	224.1	223.2	222.3	221.6	221.1	220.6	220.1	219.6
52.5°	211.7	210.9	210.1	209.5	209.0	208.5	208.0	207.6
55°	192.7	191.8	190.9	190.3	189.9	189.4	189.0	188.6
57.5°	174.1	173.3	172.5	171.8	171.3	170.9	170.4	169.9
60°	161.0	160.2	159.5	158.9	158.4	158.0	157.6	157.2
62.5°	148.2	147.5	146.8	146.2	146.0	145.7	145.4	145.1
65°	129.4	128.7	128.0	127.6	127.4	127.1	126.8	126.6
67.5°	110.6	110.0	109.5	109.0	108.7	108.3	108.0	107.7
70°	98.5	97.9	97.4	96.9	96.5	96.1	95.6	95.2
72.5°	86.3	85.7	85.2	84.8	84.7	84.4	84.2	84.0
75°	68.6	68.1	67.7	67.4	67.2	66.9	66.7	66.5
77.5°	52.0	51.8	51.5	51.4	51.4	51.4	51.4	51.4
80°	41.5	41.4	41.4	41.4	41.4	41.4	41.4	41.4
82.5°	32.0	31.8	31.7	31.5	31.5	31.4	31.4	31.3
85°	18.1	18.0	17.8	17.7	17.7	17.7	17.7	17.7
87.5°	12.5	12.7	12.8	12.9	13.1	13.2	13.2	13.4
90°	30.8	31.8	33.0	33.7	34.2	34.8	35.3	35.8
92.5°	47.5	48.4	49.3	49.5	49.2	48.9	48.6	48.2
95°	90.5	91.6	92.6	93.2	93.2	93.2	93.2	93.2
97.5°	140.8	142.0	143.2	143.8	143.7	143.5	143.5	143.4
100°	177.2	178.0	178.8	179.4	180.0	180.5	181.0	181.6
102.5°	219.3	220.1	220.9	221.2	221.1	220.9	220.9	220.8
105°	281.9	281.9	281.9	282.2	282.7	283.3	283.8	284.3
107.5°	349.8	350.6	351.5	351.7	351.4	351.1	350.8	350.5
110°	395.1	396.2	397.3	397.5	397.0	396.5	395.9	395.4





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CATALOG NUMBER: S123DIW-S340D1535U927-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	440.5	441.7	443.0	443.6	443.5	443.4	443.3	443.1
115°	509.5	509.7	509.9	509.9	509.7	509.5	509.1	508.9
117.5°	579.0	579.0	578.9	578.5	577.7	577.0	576.3	575.5
120°	625.4	625.2	624.9	624.5	624.0	623.4	622.9	622.3
122.5°	672.3	671.7	671.0	670.3	669.6	668.8	668.0	667.3
125°	742.1	741.0	740.0	738.9	737.8	736.8	735.7	734.7
127.5°	811.0	809.5	808.0	806.7	805.5	804.2	803.0	801.8
130°	856.7	855.7	854.7	853.2	851.4	849.5	847.6	845.7
132.5°	901.3	900.0	898.7	897.4	896.0	894.5	893.0	891.6
135°	967.9	966.8	965.7	965.0	964.4	963.8	963.4	962.8
137.5°	1033.0	1031.9	1030.8	1029.7	1028.6	1027.7	1026.7	1025.6
140°	1075.8	1075.5	1075.2	1074.2	1072.3	1070.5	1068.6	1066.8
142.5°	1115.9	1115.6	1115.4	1114.5	1113.1	1111.7	1110.2	1108.8
145°	1174.9	1174.6	1174.4	1173.7	1172.7	1171.6	1170.5	1169.5
147.5°	1230.7	1230.7	1230.7	1229.9	1228.3	1226.7	1225.0	1223.4
150°	1265.0	1265.0	1265.0	1264.2	1262.7	1261.1	1259.5	1257.9
152.5°	1296.5	1296.9	1297.4	1296.9	1295.5	1294.1	1292.7	1291.3
155°	1342.4	1343.5	1344.6	1344.2	1342.3	1340.5	1338.6	1336.7
157.5°	1382.0	1383.1	1384.2	1384.0	1382.5	1381.0	1379.5	1378.1
160°	1406.3	1407.6	1408.9	1409.1	1408.0	1406.9	1405.9	1404.8
162.5°	1429.2	1430.5	1431.9	1431.7	1430.0	1428.3	1426.6	1424.9
165°	1458.2	1459.8	1461.3	1461.3	1459.4	1457.5	1455.6	1453.8
167.5°	1481.7	1483.4	1484.9	1484.9	1483.4	1481.7	1480.0	1478.4
170°	1494.5	1496.4	1498.3	1498.3	1496.4	1494.5	1492.7	1490.8
172.5°	1504.6	1506.3	1507.9	1507.8	1505.9	1504.1	1502.2	1500.4
175°	1515.5	1517.1	1518.7	1518.5	1516.7	1514.8	1513.0	1511.2
177.5°	1520.4	1521.6	1522.9	1522.8	1521.3	1519.8	1518.4	1516.9
180°	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7

(END OF REPORT)