

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: P332723

Luminaire Tested: **S124DIW-S350D770U835-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332723  
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-S350D770U835-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 770 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4513.7 lumens  
Efficiency: N/A  
Efficacy: 148.5 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

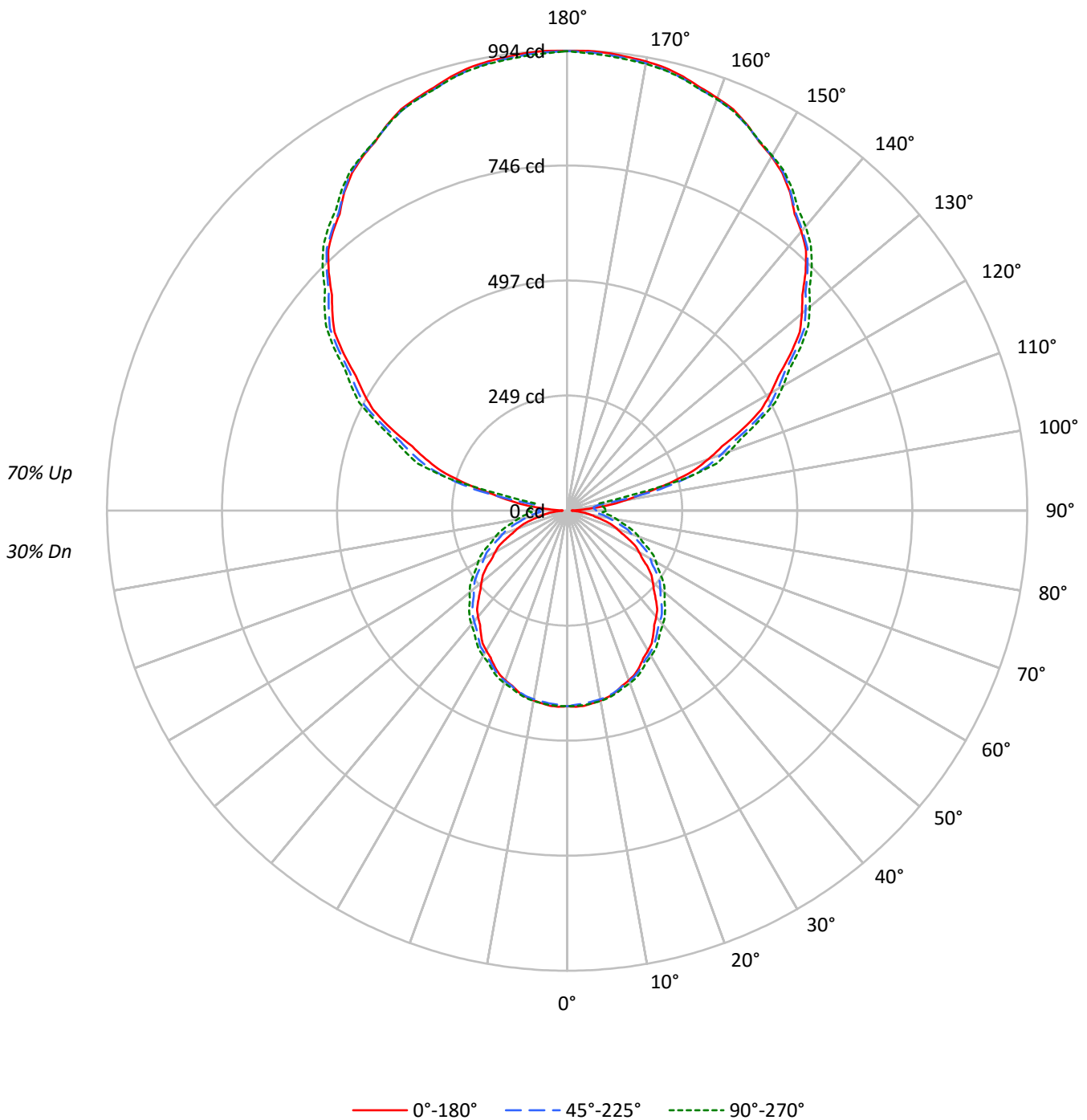
Input Watts (W): 30.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332723

CATALOG NUMBER: S124DIW-S350D770U835-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P332723

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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	92	92	92	92	72	72	72	54	54	54	37	37	37	30
1	93	88	84	81	83	79	76	73	62	60	58	46	45	44	32	31	30	24
2	84	77	70	65	75	69	63	59	54	50	47	40	38	36	28	26	25	19
3	76	67	60	54	68	60	54	49	47	43	39	35	32	30	24	23	21	16
4	70	59	51	45	62	53	46	41	42	37	33	31	28	25	22	20	18	14
5	64	52	44	38	57	47	40	35	37	32	28	28	25	22	19	17	15	12
6	59	47	39	33	52	42	35	30	33	28	25	25	22	19	18	15	13	10
7	54	42	34	29	48	38	31	26	30	25	21	23	19	17	16	14	12	9
8	50	38	30	25	45	34	28	23	27	22	19	21	17	15	15	12	11	8
9	46	35	27	22	42	31	25	20	25	20	17	19	16	13	13	11	9	7
10	43	32	24	20	39	29	22	18	23	18	15	17	14	12	12	10	9	6

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

	0°	45°	90°
0°	3412	3412	3412
5°	3423	3335	3344
10°	3402	3281	3278
15°	3371	3217	3200
20°	3325	3147	3124
25°	3274	3070	3039
30°	3217	2992	2954
35°	3154	2912	2878
40°	3103	2836	2800
45°	3027	2766	2732
50°	2964	2686	2661
55°	2899	2610	2577
60°	2796	2513	2501
65°	2682	2410	2407
70°	2547	2292	2298
75°	2356	2161	2199
80°	2145	2037	2102
85°	1878	1926	2046



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	40.0	0.9
10°-20°	114.7	2.5
20°-30°	173.4	3.8
30°-40°	209.8	4.6
40°-50°	221.8	4.9
50°-60°	208.8	4.6
60°-70°	173.2	3.8
70°-80°	121.7	2.7
80°-90°	71.6	1.6
90°-100°	74.8	1.7
100°-110°	246.6	5.5
110°-120°	434.3	9.6
120°-130°	537.0	11.9
130°-140°	567.3	12.6
140°-150°	526.8	11.7
150°-160°	424.1	9.4
160°-170°	273.5	6.1
170°-180°	94.3	2.1
0°-30°	328.1	7.3
0°-40°	537.9	11.9
0°-60°	968.5	21.5
0°-90°	1335.0	29.6
90°-120°	755.7	16.7
90°-150°	2386.8	52.9
90°-180°	3179.0	70.4
0°-180°	4513.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	423	423	423	423	423	
5°	423	422	418	422	422	40
15°	406	406	405	409	408	114
25°	371	374	375	380	381	171
35°	325	330	335	341	343	203
45°	271	280	289	296	299	209
55°	212	222	236	245	248	189
65°	147	162	178	189	194	145
75°	81	99	119	132	136	87
85°	25	45	66	80	85	27
90°	10	37	63	81	87	7
95°	47	39	58	74	80	57
105°	228	242	263	279	258	239
115°	420	427	441	452	456	413
125°	588	591	601	612	616	525
135°	728	728	734	743	747	561
145°	839	841	841	845	848	524
155°	920	920	918	921	919	424
165°	970	967	966	972	966	274
175°	992	988	989	995	986	94
180°	992	992	992	992	992	



TEST NUMBER: P332723

CATALOG NUMBER: S124DIW-S350D770U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7
2.5°	424.2	423.9	423.7	423.4	423.2	422.7	422.1	421.4	420.7	420.0	420.6
5°	423.2	422.8	422.5	422.2	421.9	421.4	420.6	419.9	419.2	418.4	419.3
7.5°	419.6	419.4	419.2	419.0	418.8	418.4	417.8	417.2	416.6	416.0	416.9
10°	416.5	416.4	416.3	416.2	416.1	415.8	415.3	414.7	414.2	413.7	414.6
12.5°	412.4	412.3	412.3	412.3	412.3	412.1	411.7	411.4	411.0	410.7	411.5
15°	405.6	405.8	405.9	406.0	406.1	406.0	405.6	405.3	405.0	404.7	405.6
17.5°	396.5	396.8	397.1	397.4	397.7	397.9	397.8	397.7	397.7	397.6	398.6
20°	390.0	390.3	390.7	391.0	391.3	391.5	391.6	391.7	391.8	391.9	393.0
22.5°	382.8	383.2	383.6	384.0	384.4	384.7	384.9	385.1	385.3	385.5	386.5
25°	371.1	371.7	372.4	373.0	373.6	374.1	374.4	374.7	375.0	375.4	376.5
27.5°	358.0	359.0	359.9	360.8	361.7	362.4	362.9	363.4	363.9	364.4	365.4
30°	349.3	350.2	351.0	351.8	352.7	353.5	354.2	354.9	355.7	356.4	357.6
32.5°	339.9	340.9	341.9	342.9	343.9	344.8	345.6	346.4	347.3	348.1	349.4
35°	324.7	326.0	327.2	328.5	329.8	330.9	332.0	333.0	334.1	335.1	336.6
37.5°	309.5	310.9	312.4	313.8	315.3	316.6	318.0	319.3	320.6	321.9	323.4
40°	299.6	301.0	302.4	303.7	305.1	306.5	308.0	309.5	310.9	312.4	314.0
42.5°	288.3	289.8	291.3	292.9	294.4	296.0	297.8	299.5	301.2	302.9	304.7
45°	270.7	272.7	274.7	276.7	278.7	280.7	282.7	284.7	286.7	288.7	290.5
47.5°	254.0	256.1	258.1	260.2	262.2	264.4	266.7	269.1	271.4	273.7	275.5
50°	241.9	244.2	246.5	248.8	251.1	253.4	255.8	258.1	260.4	262.7	264.8
52.5°	229.8	232.1	234.4	236.7	239.0	241.5	244.1	246.8	249.4	252.1	254.2
55°	212.1	214.3	216.5	218.7	220.9	223.6	226.7	229.9	233.0	236.2	238.3
57.5°	192.3	195.0	197.7	200.5	203.2	206.1	209.3	212.4	215.5	218.7	221.2
60°	179.4	182.1	184.9	187.6	190.3	193.4	196.9	200.4	203.8	207.3	209.7
62.5°	166.9	169.9	172.9	175.9	178.8	182.1	185.5	189.0	192.5	196.0	198.4
65°	146.7	150.1	153.5	156.8	160.2	163.7	167.2	170.8	174.4	178.0	180.6
67.5°	127.3	130.9	134.5	138.1	141.6	145.3	149.2	153.0	156.8	160.6	163.3
70°	114.1	117.6	121.2	124.8	128.4	132.2	136.2	140.2	144.2	148.2	151.0
72.5°	101.2	104.9	108.5	112.2	115.8	119.8	124.0	128.3	132.5	136.8	139.5
75°	81.4	85.3	89.2	93.1	97.0	101.1	105.6	110.0	114.4	118.8	121.8
77.5°	63.0	67.1	71.2	75.3	79.4	83.8	88.4	93.1	97.7	102.3	105.3
80°	51.6	55.8	60.0	64.2	68.4	72.8	77.5	82.1	86.7	91.4	94.5
82.5°	40.2	44.6	49.0	53.4	57.7	62.2	66.9	71.5	76.1	80.8	84.0
85°	25.1	29.5	33.9	38.3	42.8	47.3	52.1	56.8	61.5	66.3	69.4
87.5°	14.5	19.1	23.8	28.4	33.1	37.8	42.7	47.6	52.4	57.3	60.6
90°	9.8	15.8	21.8	27.9	33.9	39.8	45.7	51.5	57.3	63.2	67.2
92.5°	16.5	20.4	24.3	28.2	32.1	37.0	42.8	48.6	54.5	60.3	64.3
95°	47.0	44.8	42.7	40.6	38.4	39.6	44.1	48.6	53.0	57.5	61.3
97.5°	92.3	98.8	105.3	111.7	118.2	114.4	100.3	86.1	72.0	57.8	60.7
100°	126.9	132.6	138.3	144.1	149.8	143.3	124.6	106.0	87.3	68.6	68.7
102.5°	166.1	170.7	175.3	179.9	184.4	187.2	188.3	189.3	190.4	191.4	163.9
105°	227.7	230.8	233.9	237.0	240.1	244.0	248.7	253.4	258.1	262.8	266.9
107.5°	285.6	287.9	290.1	292.3	294.5	298.0	302.8	307.6	312.4	317.2	320.6
110°	324.5	326.4	328.4	330.4	332.3	335.6	340.3	345.0	349.7	354.3	357.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	362.1	364.3	366.5	368.7	370.9	373.9	377.9	381.9	385.9	389.8	392.1
115°	420.0	421.4	422.9	424.3	425.8	428.1	431.3	434.5	437.7	440.9	443.5
117.5°	472.6	473.8	475.1	476.3	477.5	479.9	483.4	486.9	490.4	493.9	496.0
120°	507.9	508.8	509.8	510.8	511.8	513.7	516.6	519.5	522.4	525.2	527.7
122.5°	541.1	541.6	542.0	542.5	543.0	544.7	547.9	551.0	554.1	557.2	559.5
125°	588.3	588.9	589.4	590.0	590.5	591.9	594.2	596.5	598.8	601.1	603.6
127.5°	633.3	633.4	633.5	633.5	633.6	635.0	637.8	640.6	643.3	646.1	647.9
130°	662.1	662.1	662.2	662.2	662.3	663.4	665.6	667.8	669.9	672.1	674.2
132.5°	688.8	689.0	689.2	689.4	689.5	690.6	692.6	694.6	696.5	698.5	700.5
135°	728.4	728.2	728.1	727.9	727.7	728.3	729.7	731.1	732.5	733.9	735.9
137.5°	763.9	763.8	763.8	763.8	763.7	764.2	765.3	766.4	767.5	768.6	770.5
140°	787.0	787.3	787.5	787.7	787.9	788.3	788.7	789.1	789.6	790.0	791.9
142.5°	807.4	808.0	808.6	809.2	809.7	810.1	810.2	810.3	810.5	810.6	812.2
145°	839.3	839.6	840.0	840.4	840.8	841.0	841.0	841.0	841.0	841.0	841.8
147.5°	864.6	865.5	866.3	867.1	867.9	868.2	868.1	867.9	867.7	867.6	867.8
150°	883.1	883.6	884.2	884.7	885.3	885.5	885.3	885.1	885.0	884.8	884.8
152.5°	898.1	898.6	899.1	899.6	900.1	900.2	899.9	899.7	899.4	899.1	899.3
155°	919.7	919.9	920.0	920.2	920.4	920.2	919.7	919.2	918.7	918.2	918.9
157.5°	938.0	937.9	937.8	937.7	937.6	937.2	936.7	936.1	935.5	935.0	935.8
160°	948.6	948.1	947.7	947.2	946.7	946.3	946.2	946.0	945.8	945.7	946.7
162.5°	958.1	957.5	956.9	956.3	955.6	955.2	955.1	954.9	954.7	954.6	955.6
165°	970.2	969.3	968.5	967.7	966.9	966.5	966.5	966.5	966.5	966.5	967.8
167.5°	979.7	978.8	978.0	977.1	976.2	975.8	975.7	975.6	975.5	975.4	976.8
170°	985.0	984.0	983.0	982.0	981.1	980.6	980.8	981.0	981.1	981.3	982.6
172.5°	988.6	987.6	986.6	985.6	984.6	984.2	984.4	984.5	984.7	984.9	986.2
175°	992.4	991.4	990.5	989.5	988.5	988.1	988.2	988.4	988.6	988.7	990.2
177.5°	994.2	993.3	992.4	991.4	990.5	990.2	990.5	990.7	991.0	991.2	992.3
180°	992.4	992.4	992.4	992.4	992.4	992.4	992.4	992.4	992.4	992.4	992.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7
2.5°	421.2	421.8	422.4	422.6	422.6	422.5	422.4	422.3
5°	420.1	420.9	421.8	422.2	422.1	421.9	421.8	421.7
7.5°	417.9	418.8	419.8	420.2	420.1	420.0	419.9	419.8
10°	415.6	416.5	417.5	417.9	417.8	417.7	417.6	417.5
12.5°	412.4	413.3	414.1	414.5	414.5	414.5	414.5	414.4
15°	406.6	407.5	408.5	408.9	408.8	408.7	408.6	408.5
17.5°	399.5	400.5	401.5	401.9	401.8	401.7	401.7	401.6
20°	394.0	395.1	396.1	396.7	396.7	396.7	396.7	396.7
22.5°	387.6	388.6	389.7	390.3	390.5	390.6	390.8	391.0
25°	377.7	378.8	380.0	380.6	380.7	380.8	380.9	381.0
27.5°	366.5	367.6	368.7	369.3	369.4	369.5	369.6	369.8
30°	358.7	359.9	361.0	361.7	361.9	362.2	362.4	362.6
32.5°	350.7	352.1	353.4	354.2	354.4	354.6	354.8	355.0
35°	338.1	339.5	341.0	341.9	342.2	342.5	342.9	343.2
37.5°	324.9	326.3	327.8	328.8	329.1	329.4	329.8	330.1
40°	315.6	317.1	318.7	319.7	320.1	320.6	321.0	321.4
42.5°	306.4	308.2	309.9	311.0	311.3	311.6	312.0	312.3
45°	292.3	294.1	295.9	297.0	297.6	298.1	298.6	299.1
47.5°	277.4	279.2	281.1	282.3	283.0	283.6	284.2	284.9
50°	266.9	269.0	271.1	272.5	273.1	273.7	274.4	275.0
52.5°	256.3	258.4	260.5	261.9	262.5	263.1	263.8	264.4
55°	240.4	242.5	244.6	246.0	246.6	247.2	247.9	248.5
57.5°	223.7	226.2	228.7	230.2	230.8	231.4	232.0	232.6
60°	212.2	214.6	217.0	218.6	219.5	220.3	221.2	222.0
62.5°	200.8	203.2	205.6	207.3	208.1	208.9	209.8	210.6
65°	183.2	185.9	188.5	190.2	191.1	191.9	192.8	193.6
67.5°	166.0	168.7	171.3	173.1	173.9	174.7	175.5	176.4
70°	153.8	156.7	159.5	161.3	162.0	162.8	163.5	164.2
72.5°	142.3	145.1	147.8	149.6	150.4	151.2	152.1	152.9
75°	124.7	127.6	130.6	132.5	133.5	134.4	135.4	136.3
77.5°	108.3	111.3	114.3	116.3	117.3	118.3	119.3	120.3
80°	97.7	100.8	104.0	106.0	106.8	107.7	108.5	109.3
82.5°	87.2	90.5	93.7	95.8	96.7	97.6	98.6	99.5
85°	72.6	75.7	78.9	81.0	82.0	83.1	84.1	85.2
87.5°	63.8	67.1	70.3	72.4	73.4	74.4	75.4	76.4
90°	71.3	75.3	79.4	82.0	83.1	84.3	85.5	86.6
92.5°	68.2	72.2	76.1	78.6	79.5	80.4	81.3	82.2
95°	65.2	69.0	72.8	75.3	76.4	77.5	78.6	79.7
97.5°	63.6	66.4	69.3	71.2	72.3	73.4	74.4	75.5
100°	68.7	68.7	68.8	69.2	70.1	71.0	71.9	72.9
102.5°	136.5	109.0	81.5	68.1	69.0	69.8	70.7	71.6
105°	271.1	275.2	279.3	278.8	273.7	268.6	263.5	258.4
107.5°	323.9	327.2	330.5	332.8	334.2	335.6	337.0	338.4
110°	359.8	362.6	365.3	367.4	368.7	370.0	371.4	372.7





TEST NUMBER: P332723

CATALOG NUMBER: S124DIW-S350D770U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	394.4	396.7	398.9	400.8	402.3	403.7	405.2	406.7
115°	446.2	448.8	451.5	453.2	453.9	454.6	455.4	456.1
117.5°	498.1	500.2	502.4	503.8	504.6	505.4	506.1	506.9
120°	530.1	532.5	535.0	536.4	537.0	537.5	538.0	538.5
122.5°	561.8	564.1	566.4	567.8	568.2	568.6	569.0	569.5
125°	606.1	608.6	611.1	612.8	613.6	614.4	615.2	615.9
127.5°	649.7	651.5	653.3	654.5	655.1	655.6	656.2	656.8
130°	676.2	678.3	680.4	681.7	682.3	683.0	683.6	684.2
132.5°	702.5	704.4	706.4	707.7	708.2	708.7	709.1	709.6
135°	738.0	740.0	742.0	743.5	744.4	745.4	746.3	747.3
137.5°	772.4	774.3	776.2	777.3	777.8	778.2	778.6	779.0
140°	793.7	795.6	797.4	798.7	799.4	800.1	800.8	801.5
142.5°	813.7	815.3	816.9	817.9	818.4	818.8	819.3	819.8
145°	842.6	843.4	844.2	845.0	845.7	846.5	847.2	848.0
147.5°	868.0	868.2	868.4	868.8	869.3	869.8	870.3	870.8
150°	884.8	884.8	884.8	884.9	885.1	885.2	885.4	885.5
152.5°	899.6	899.8	900.1	900.2	900.1	900.0	899.9	899.8
155°	919.5	920.2	920.8	920.9	920.4	919.9	919.4	919.0
157.5°	936.7	937.6	938.4	938.4	937.6	936.7	935.8	935.0
160°	947.7	948.6	949.6	949.6	948.6	947.7	946.7	945.7
162.5°	956.6	957.5	958.5	958.5	957.4	956.2	955.1	954.0
165°	969.1	970.4	971.7	971.7	970.2	968.7	967.2	965.7
167.5°	978.3	979.7	981.2	981.1	979.4	977.8	976.1	974.5
170°	983.9	985.3	986.6	986.4	984.8	983.1	981.5	979.8
172.5°	987.5	988.8	990.1	989.9	988.1	986.4	984.6	982.8
175°	991.7	993.2	994.7	994.4	992.4	990.5	988.5	986.5
177.5°	993.4	994.4	995.5	995.2	993.6	992.0	990.5	988.9
180°	992.4	992.4	992.4	992.4	992.4	992.4	992.4	992.4

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