

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: P332723-940

Luminaire Tested: **S124DIW-S350D770U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332723-940  
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-S350D770U940-4F0-1E-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: 4024.9 lumens  
Efficiency: N/A  
Efficacy: 132.4 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

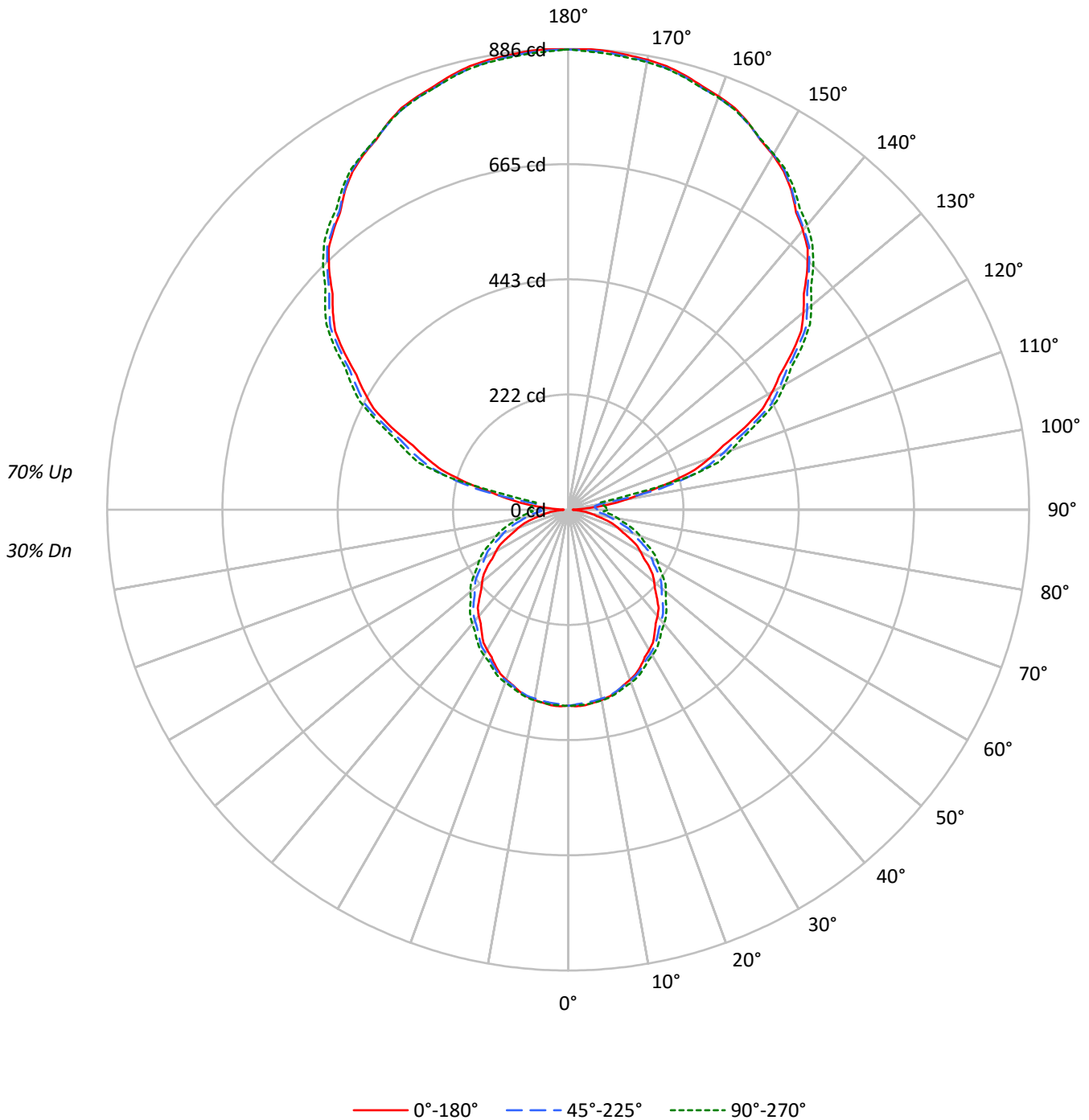
Input Watts (W): 30.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332723-940

CATALOG NUMBER: S124DIW-S350D770U940-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P332723-940

CATALOG NUMBER: S124DIW-S350D770U940-4F0-1E-UDD-D

**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°	3043	3043	3043
5°	3053	2974	2982
10°	3033	2925	2923
15°	3006	2869	2854
20°	2965	2807	2785
25°	2919	2737	2710
30°	2869	2668	2634
35°	2812	2597	2566
40°	2768	2530	2497
45°	2700	2466	2436
50°	2643	2396	2373
55°	2585	2328	2298
60°	2493	2242	2231
65°	2392	2149	2146
70°	2271	2045	2049
75°	2101	1926	1961
80°	1913	1816	1875
85°	1676	1717	1825



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	35.7	0.9
10°-20°	102.3	2.5
20°-30°	154.6	3.8
30°-40°	187.1	4.6
40°-50°	197.8	4.9
50°-60°	186.2	4.6
60°-70°	154.4	3.8
70°-80°	108.5	2.7
80°-90°	63.9	1.6
90°-100°	66.7	1.7
100°-110°	219.9	5.5
110°-120°	387.3	9.6
120°-130°	478.9	11.9
130°-140°	505.8	12.6
140°-150°	469.8	11.7
150°-160°	378.1	9.4
160°-170°	243.9	6.1
170°-180°	84.1	2.1
0°-30°	292.6	7.3
0°-40°	479.7	11.9
0°-60°	863.6	21.5
0°-90°	1190.4	29.6
90°-120°	673.9	16.7
90°-150°	2128.4	52.9
90°-180°	2834.0	70.4
0°-180°	4024.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	377	377	377	377	377	
5°	377	376	373	376	376	36
15°	362	362	361	364	364	102
25°	331	333	335	339	340	152
35°	290	295	299	304	306	181
45°	241	249	257	264	267	187
55°	189	198	211	219	222	168
65°	131	144	159	169	173	130
75°	73	88	106	117	122	77
85°	22	40	59	71	76	24
90°	9	33	56	72	77	6
95°	42	35	51	66	71	51
105°	203	216	234	249	230	213
115°	374	381	393	403	407	369
125°	525	527	536	546	549	468
135°	650	649	654	662	666	500
145°	748	750	750	753	756	468
155°	820	821	819	821	820	378
165°	865	862	862	866	861	244
175°	885	881	882	887	880	84
180°	885	885	885	885	885	



TEST NUMBER: P332723-940

CATALOG NUMBER: S124DIW-S350D770U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9
2.5°	378.3	378.0	377.8	377.6	377.4	376.9	376.4	375.8	375.1	374.5	375.1
5°	377.4	377.0	376.7	376.5	376.2	375.8	375.1	374.4	373.8	373.1	373.9
7.5°	374.2	374.0	373.8	373.6	373.4	373.1	372.6	372.0	371.5	371.0	371.8
10°	371.4	371.3	371.2	371.1	371.0	370.8	370.3	369.8	369.3	368.9	369.7
12.5°	367.7	367.7	367.7	367.7	367.7	367.5	367.1	366.8	366.5	366.2	366.9
15°	361.7	361.9	361.9	362.0	362.1	362.0	361.7	361.4	361.1	360.9	361.7
17.5°	353.6	353.8	354.1	354.4	354.6	354.8	354.7	354.6	354.6	354.5	355.4
20°	347.8	348.0	348.4	348.7	348.9	349.1	349.2	349.3	349.4	349.5	350.4
22.5°	341.3	341.7	342.1	342.4	342.8	343.0	343.2	343.4	343.6	343.8	344.6
25°	330.9	331.4	332.1	332.6	333.1	333.6	333.9	334.1	334.4	334.7	335.7
27.5°	319.2	320.1	320.9	321.7	322.5	323.2	323.6	324.0	324.5	324.9	325.8
30°	311.5	312.3	313.0	313.7	314.5	315.2	315.8	316.5	317.2	317.8	318.9
32.5°	303.1	304.0	304.9	305.8	306.7	307.5	308.2	308.9	309.7	310.4	311.6
35°	289.5	290.7	291.8	292.9	294.1	295.1	296.0	296.9	297.9	298.8	300.1
37.5°	276.0	277.2	278.6	279.8	281.2	282.3	283.6	284.7	285.9	287.0	288.4
40°	267.2	268.4	269.7	270.8	272.1	273.3	274.6	276.0	277.2	278.6	280.0
42.5°	257.1	258.4	259.8	261.2	262.5	263.9	265.6	267.1	268.6	270.1	271.7
45°	241.4	243.2	245.0	246.7	248.5	250.3	252.1	253.9	255.7	257.4	259.0
47.5°	226.5	228.4	230.2	232.0	233.8	235.8	237.8	240.0	242.0	244.1	245.7
50°	215.7	217.8	219.8	221.9	223.9	226.0	228.1	230.2	232.2	234.3	236.1
52.5°	204.9	207.0	209.0	211.1	213.1	215.3	217.7	220.1	222.4	224.8	226.7
55°	189.1	191.1	193.1	195.0	197.0	199.4	202.2	205.0	207.8	210.6	212.5
57.5°	171.5	173.9	176.3	178.8	181.2	183.8	186.6	189.4	192.2	195.0	197.2
60°	160.0	162.4	164.9	167.3	169.7	172.5	175.6	178.7	181.7	184.9	187.0
62.5°	148.8	151.5	154.2	156.9	159.4	162.4	165.4	168.5	171.7	174.8	176.9
65°	130.8	133.8	136.9	139.8	142.9	146.0	149.1	152.3	155.5	158.7	161.0
67.5°	113.5	116.7	119.9	123.1	126.3	129.6	133.0	136.4	139.8	143.2	145.6
70°	101.7	104.9	108.1	111.3	114.5	117.9	121.5	125.0	128.6	132.2	134.6
72.5°	90.2	93.5	96.8	100.0	103.3	106.8	110.6	114.4	118.2	122.0	124.4
75°	72.6	76.1	79.5	83.0	86.5	90.2	94.2	98.1	102.0	105.9	108.6
77.5°	56.2	59.8	63.5	67.1	70.8	74.7	78.8	83.0	87.1	91.2	93.9
80°	46.0	49.8	53.5	57.2	61.0	64.9	69.1	73.2	77.3	81.5	84.3
82.5°	35.8	39.8	43.7	47.6	51.5	55.5	59.7	63.8	67.9	72.1	74.9
85°	22.4	26.3	30.2	34.2	38.2	42.2	46.5	50.6	54.8	59.1	61.9
87.5°	12.9	17.0	21.2	25.3	29.5	33.7	38.1	42.4	46.7	51.1	54.0
90°	8.7	14.1	19.4	24.9	30.2	35.5	40.8	45.9	51.1	56.4	59.9
92.5°	14.7	18.2	21.7	25.1	28.6	33.0	38.2	43.3	48.6	53.8	57.3
95°	41.9	39.9	38.1	36.2	34.2	35.3	39.3	43.3	47.3	51.3	54.7
97.5°	82.3	88.1	93.9	99.6	105.4	102.0	89.4	76.8	64.2	51.5	54.1
100°	113.2	118.2	123.3	128.5	133.6	127.8	111.1	94.5	77.8	61.2	61.3
102.5°	148.1	152.2	156.3	160.4	164.4	166.9	167.9	168.8	169.8	170.7	146.2
105°	203.0	205.8	208.6	211.3	214.1	217.6	221.8	226.0	230.2	234.3	238.0
107.5°	254.7	256.7	258.7	260.6	262.6	265.7	270.0	274.3	278.6	282.9	285.9
110°	289.4	291.1	292.8	294.6	296.3	299.3	303.4	307.6	311.8	315.9	318.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	322.9	324.9	326.8	328.8	330.7	333.4	337.0	340.5	344.1	347.6	349.6
115°	374.5	375.8	377.1	378.4	379.7	381.7	384.6	387.4	390.3	393.2	395.5
117.5°	421.4	422.5	423.7	424.7	425.8	427.9	431.1	434.2	437.3	440.4	442.3
120°	452.9	453.7	454.6	455.5	456.4	458.1	460.7	463.2	465.8	468.3	470.6
122.5°	482.5	483.0	483.3	483.8	484.2	485.7	488.6	491.3	494.1	496.9	498.9
125°	524.6	525.1	525.6	526.1	526.6	527.8	529.9	531.9	534.0	536.0	538.2
127.5°	564.7	564.8	564.9	564.9	565.0	566.2	568.7	571.2	573.6	576.1	577.7
130°	590.4	590.4	590.5	590.5	590.6	591.6	593.5	595.5	597.4	599.3	601.2
132.5°	614.2	614.4	614.6	614.7	614.8	615.8	617.6	619.4	621.1	622.9	624.6
135°	649.5	649.3	649.3	649.1	648.9	649.4	650.7	651.9	653.2	654.4	656.2
137.5°	681.2	681.1	681.1	681.1	681.0	681.4	682.4	683.4	684.4	685.4	687.1
140°	701.8	702.0	702.2	702.4	702.6	702.9	703.3	703.6	704.1	704.5	706.1
142.5°	720.0	720.5	721.0	721.6	722.0	722.4	722.5	722.6	722.7	722.8	724.2
145°	748.4	748.7	749.0	749.4	749.8	749.9	749.9	749.9	749.9	749.9	750.6
147.5°	771.0	771.8	772.5	773.2	773.9	774.2	774.1	773.9	773.7	773.6	773.8
150°	787.5	787.9	788.5	788.9	789.4	789.6	789.4	789.3	789.2	789.0	789.0
152.5°	800.8	801.3	801.7	802.2	802.6	802.7	802.5	802.3	802.0	801.7	801.9
155°	820.1	820.3	820.4	820.6	820.7	820.6	820.1	819.7	819.2	818.8	819.4
157.5°	836.4	836.3	836.2	836.2	836.1	835.7	835.3	834.7	834.2	833.7	834.5
160°	845.9	845.4	845.1	844.6	844.2	843.8	843.7	843.6	843.4	843.3	844.2
162.5°	854.3	853.8	853.3	852.7	852.1	851.8	851.7	851.5	851.3	851.2	852.1
165°	865.1	864.3	863.6	862.9	862.2	861.8	861.8	861.8	861.8	861.8	863.0
167.5°	873.6	872.8	872.1	871.3	870.5	870.1	870.0	870.0	869.9	869.8	871.0
170°	878.3	877.4	876.6	875.7	874.9	874.4	874.6	874.8	874.9	875.0	876.2
172.5°	881.5	880.7	879.8	878.9	878.0	877.6	877.8	877.9	878.1	878.2	879.4
175°	884.9	884.0	883.2	882.3	881.5	881.1	881.2	881.4	881.5	881.6	883.0
177.5°	886.5	885.7	884.9	884.0	883.2	883.0	883.2	883.4	883.7	883.9	884.8
180°	884.9	884.9	884.9	884.9	884.9	884.9	884.9	884.9	884.9	884.9	884.9



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9
2.5°	375.6	376.1	376.7	376.8	376.8	376.7	376.7	376.6
5°	374.6	375.3	376.1	376.5	376.4	376.2	376.1	376.0
7.5°	372.6	373.4	374.3	374.7	374.6	374.5	374.4	374.3
10°	370.6	371.4	372.3	372.6	372.6	372.5	372.4	372.3
12.5°	367.7	368.5	369.3	369.6	369.6	369.6	369.6	369.5
15°	362.6	363.4	364.3	364.6	364.5	364.4	364.4	364.3
17.5°	356.2	357.1	358.0	358.4	358.3	358.2	358.2	358.1
20°	351.3	352.3	353.2	353.7	353.7	353.7	353.7	353.7
22.5°	345.6	346.5	347.5	348.0	348.2	348.3	348.5	348.7
25°	336.8	337.8	338.9	339.4	339.5	339.6	339.7	339.7
27.5°	326.8	327.8	328.8	329.3	329.4	329.5	329.6	329.8
30°	319.9	320.9	321.9	322.5	322.7	323.0	323.2	323.3
32.5°	312.7	314.0	315.1	315.8	316.0	316.2	316.4	316.6
35°	301.5	302.7	304.1	304.9	305.1	305.4	305.8	306.0
37.5°	289.7	291.0	292.3	293.2	293.5	293.7	294.1	294.4
40°	281.4	282.8	284.2	285.1	285.4	285.9	286.2	286.6
42.5°	273.2	274.8	276.3	277.3	277.6	277.9	278.2	278.5
45°	260.6	262.3	263.9	264.8	265.4	265.8	266.3	266.7
47.5°	247.4	249.0	250.7	251.7	252.4	252.9	253.4	254.0
50°	238.0	239.9	241.7	243.0	243.5	244.1	244.7	245.2
52.5°	228.5	230.4	232.3	233.5	234.1	234.6	235.2	235.8
55°	214.4	216.2	218.1	219.4	219.9	220.4	221.1	221.6
57.5°	199.5	201.7	203.9	205.3	205.8	206.3	206.9	207.4
60°	189.2	191.4	193.5	194.9	195.7	196.4	197.2	198.0
62.5°	179.1	181.2	183.3	184.9	185.6	186.3	187.1	187.8
65°	163.4	165.8	168.1	169.6	170.4	171.1	171.9	172.6
67.5°	148.0	150.4	152.8	154.4	155.1	155.8	156.5	157.3
70°	137.1	139.7	142.2	143.8	144.5	145.2	145.8	146.4
72.5°	126.9	129.4	131.8	133.4	134.1	134.8	135.6	136.3
75°	111.2	113.8	116.5	118.2	119.0	119.8	120.7	121.5
77.5°	96.6	99.2	101.9	103.7	104.6	105.5	106.4	107.3
80°	87.1	89.9	92.7	94.5	95.2	96.0	96.8	97.5
82.5°	77.8	80.7	83.6	85.4	86.2	87.0	87.9	88.7
85°	64.7	67.5	70.4	72.2	73.1	74.1	75.0	76.0
87.5°	56.9	59.8	62.7	64.6	65.5	66.3	67.2	68.1
90°	63.6	67.1	70.8	73.1	74.1	75.2	76.2	77.2
92.5°	60.8	64.4	67.9	70.1	70.9	71.7	72.5	73.3
95°	58.1	61.5	64.9	67.1	68.1	69.1	70.1	71.1
97.5°	56.7	59.2	61.8	63.5	64.5	65.5	66.3	67.3
100°	61.3	61.3	61.3	61.7	62.5	63.3	64.1	65.0
102.5°	121.7	97.2	72.7	60.7	61.5	62.2	63.0	63.8
105°	241.7	245.4	249.1	248.6	244.1	239.5	235.0	230.4
107.5°	288.8	291.8	294.7	296.8	298.0	299.3	300.5	301.8
110°	320.8	323.3	325.7	327.6	328.8	329.9	331.2	332.3





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CATALOG NUMBER: S124DIW-S350D770U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	351.7	353.7	355.7	357.4	358.7	360.0	361.3	362.7
115°	397.9	400.2	402.6	404.1	404.7	405.4	406.1	406.7
117.5°	444.2	446.0	448.0	449.2	450.0	450.7	451.3	452.0
120°	472.7	474.8	477.1	478.3	478.8	479.3	479.7	480.2
122.5°	501.0	503.0	505.1	506.3	506.7	507.0	507.4	507.8
125°	540.5	542.7	544.9	546.4	547.2	547.9	548.6	549.2
127.5°	579.3	580.9	582.6	583.6	584.2	584.6	585.1	585.7
130°	603.0	604.8	606.7	607.9	608.4	609.0	609.6	610.1
132.5°	626.4	628.1	629.9	631.1	631.5	632.0	632.3	632.8
135°	658.1	659.9	661.6	663.0	663.8	664.7	665.5	666.4
137.5°	688.8	690.5	692.1	693.1	693.6	693.9	694.3	694.6
140°	707.8	709.4	711.1	712.2	712.8	713.5	714.1	714.7
142.5°	725.6	727.0	728.4	729.3	729.8	730.1	730.6	731.0
145°	751.4	752.1	752.8	753.5	754.1	754.8	755.5	756.2
147.5°	774.0	774.2	774.4	774.7	775.2	775.6	776.1	776.5
150°	789.0	789.0	789.0	789.1	789.3	789.3	789.5	789.6
152.5°	802.2	802.4	802.6	802.7	802.6	802.5	802.5	802.4
155°	819.9	820.6	821.1	821.2	820.7	820.3	819.8	819.5
157.5°	835.3	836.1	836.8	836.8	836.1	835.3	834.5	833.7
160°	845.1	845.9	846.8	846.8	845.9	845.1	844.2	843.3
162.5°	853.0	853.8	854.7	854.7	853.7	852.7	851.7	850.7
165°	864.2	865.3	866.5	866.5	865.1	863.8	862.5	861.1
167.5°	872.4	873.6	874.9	874.9	873.3	871.9	870.4	869.0
170°	877.4	878.6	879.8	879.6	878.2	876.6	875.2	873.7
172.5°	880.6	881.7	882.9	882.7	881.1	879.6	878.0	876.4
175°	884.3	885.6	887.0	886.7	884.9	883.2	881.5	879.7
177.5°	885.8	886.7	887.7	887.4	886.0	884.6	883.2	881.8
180°	884.9	884.9	884.9	884.9	884.9	884.9	884.9	884.9

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