

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: P332502-930

Luminaire Tested: **S124DIP-S350D590U930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332502-930  
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: S124DIP-S350D590U930-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 590 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3099.9 lumens  
Efficiency: N/A  
Efficacy: 121.1 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

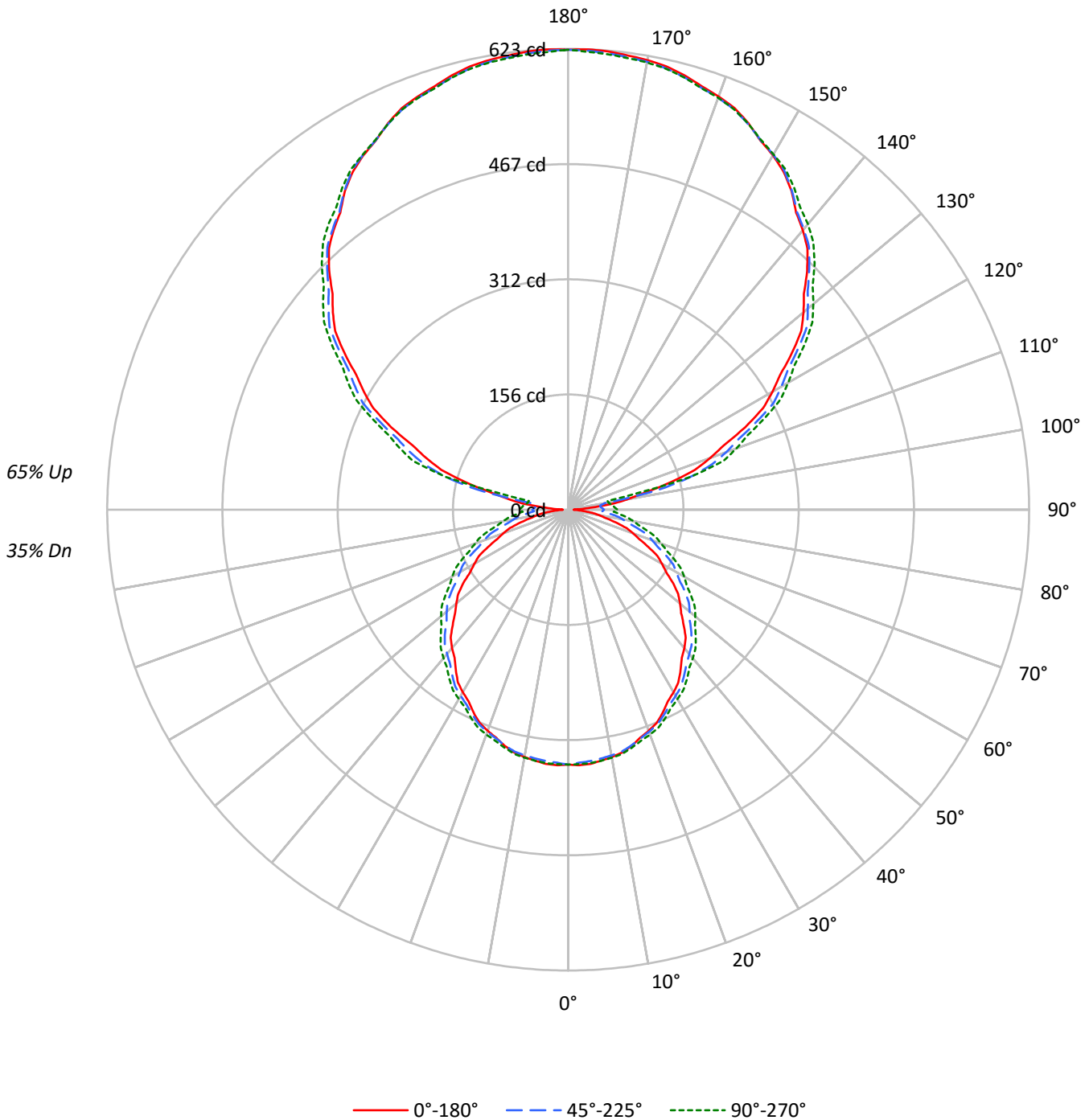
Input Watts (W): 25.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332502-930

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### Luminous Intensity Polar Plot





TEST NUMBER: P332502-930

CATALOG NUMBER: S124DIP-S350D590U930-4F0-1E-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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	42	42	42	35
1	94	89	85	81	84	81	77	74	65	62	60	50	48	47	36	35	34	28
2	85	77	71	66	76	70	65	60	56	52	49	43	41	38	32	30	28	23
3	77	68	60	54	69	61	55	50	49	45	41	38	35	32	28	26	24	19
4	71	60	52	46	63	54	47	42	44	38	34	34	30	27	25	22	20	16
5	65	53	45	39	58	48	41	36	39	34	29	30	26	23	22	20	17	14
6	59	47	39	33	53	43	36	31	35	29	26	27	23	20	20	17	15	12
7	55	43	35	29	49	39	32	27	31	26	22	25	21	18	18	15	13	11
8	51	38	31	26	46	35	28	24	29	23	20	22	19	16	17	14	12	9
9	47	35	28	23	42	32	25	21	26	21	17	20	17	14	15	13	11	8
10	44	32	25	20	40	29	23	19	24	19	16	19	15	13	14	12	10	8

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

	0°	45°	90°
0°	2782	2782	2782
5°	2791	2719	2726
10°	2774	2675	2673
15°	2749	2623	2608
20°	2711	2566	2547
25°	2669	2503	2478
30°	2623	2439	2408
35°	2571	2374	2347
40°	2530	2313	2282
45°	2468	2256	2228
50°	2417	2190	2169
55°	2363	2129	2101
60°	2280	2049	2039
65°	2187	1965	1962
70°	2076	1868	1874
75°	1922	1763	1793
80°	1750	1660	1713
85°	1534	1571	1669



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	32.6	1.1
10°-20°	93.5	3.0
20°-30°	141.4	4.6
30°-40°	171.1	5.5
40°-50°	180.8	5.8
50°-60°	170.2	5.5
60°-70°	141.2	4.6
70°-80°	99.2	3.2
80°-90°	57.9	1.9
90°-100°	54.6	1.8
100°-110°	160.2	5.2
110°-120°	275.9	8.9
120°-130°	338.6	10.9
130°-140°	356.3	11.5
140°-150°	330.3	10.7
150°-160°	265.7	8.6
160°-170°	171.4	5.5
170°-180°	59.1	1.9
0°-30°	267.5	8.6
0°-40°	438.6	14.1
0°-60°	789.6	25.5
0°-90°	1087.9	35.1
90°-120°	490.7	15.8
90°-150°	1516.0	48.9
90°-180°	2012.0	64.9
0°-180°	3099.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	345	345	345	345	345	
5°	345	344	341	344	344	33
15°	331	331	330	333	333	93
25°	303	305	306	310	311	139
35°	265	269	273	278	280	166
45°	221	228	235	242	244	171
55°	173	181	193	200	203	154
65°	120	132	145	154	158	119
75°	66	81	97	107	111	71
85°	20	37	54	65	70	22
90°	8	28	48	62	66	5
95°	31	29	44	56	61	37
105°	144	154	171	183	171	150
115°	264	269	280	290	292	260
125°	369	371	379	388	391	329
135°	457	456	461	468	471	352
145°	526	527	527	530	532	329
155°	576	577	575	577	576	266
165°	608	606	606	609	605	172
175°	622	619	620	623	618	59
180°	622	622	622	622	622	



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CATALOG NUMBER: S124DIP-S350D590U930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6
2.5°	345.8	345.6	345.4	345.2	345.0	344.6	344.1	343.6	343.0	342.4	342.9
5°	345.0	344.7	344.5	344.2	344.0	343.6	342.9	342.3	341.8	341.1	341.9
7.5°	342.1	341.9	341.8	341.6	341.4	341.1	340.6	340.1	339.7	339.2	339.9
10°	339.6	339.5	339.4	339.3	339.2	339.0	338.6	338.1	337.7	337.3	338.0
12.5°	336.2	336.1	336.1	336.1	336.1	336.0	335.7	335.4	335.1	334.8	335.5
15°	330.7	330.8	330.9	331.0	331.1	331.0	330.7	330.4	330.2	330.0	330.7
17.5°	323.3	323.5	323.8	324.0	324.2	324.4	324.3	324.2	324.2	324.2	325.0
20°	318.0	318.2	318.5	318.8	319.0	319.2	319.3	319.4	319.4	319.5	320.4
22.5°	312.1	312.4	312.7	313.1	313.4	313.6	313.8	314.0	314.1	314.3	315.1
25°	302.6	303.0	303.6	304.1	304.6	305.0	305.2	305.5	305.7	306.1	307.0
27.5°	291.9	292.7	293.4	294.2	294.9	295.5	295.9	296.3	296.7	297.1	297.9
30°	284.8	285.5	286.2	286.8	287.6	288.2	288.8	289.3	290.0	290.6	291.6
32.5°	277.1	277.9	278.8	279.6	280.4	281.1	281.8	282.4	283.2	283.8	284.9
35°	264.7	265.8	266.8	267.8	268.9	269.8	270.7	271.5	272.4	273.2	274.4
37.5°	252.3	253.5	254.7	255.8	257.1	258.1	259.3	260.3	261.4	262.4	263.7
40°	244.3	245.4	246.5	247.6	248.7	249.9	251.1	252.3	253.5	254.7	256.0
42.5°	235.1	236.3	237.5	238.8	240.0	241.3	242.8	244.2	245.6	247.0	248.4
45°	220.7	222.3	224.0	225.6	227.2	228.9	230.5	232.1	233.7	235.4	236.8
47.5°	207.1	208.8	210.4	212.1	213.8	215.6	217.4	219.4	221.3	223.1	224.6
50°	197.2	199.1	201.0	202.8	204.7	206.6	208.6	210.4	212.3	214.2	215.9
52.5°	187.4	189.2	191.1	193.0	194.9	196.9	199.0	201.2	203.3	205.5	207.2
55°	172.9	174.7	176.5	178.3	180.1	182.3	184.8	187.4	190.0	192.6	194.3
57.5°	156.8	159.0	161.2	163.5	165.7	168.0	170.6	173.2	175.7	178.3	180.3
60°	146.3	148.5	150.7	153.0	155.2	157.7	160.5	163.4	166.2	169.0	171.0
62.5°	136.1	138.5	141.0	143.4	145.8	148.5	151.2	154.1	156.9	159.8	161.8
65°	119.6	122.4	125.1	127.8	130.6	133.5	136.3	139.3	142.2	145.1	147.2
67.5°	103.8	106.7	109.7	112.6	115.4	118.5	121.6	124.7	127.8	130.9	133.1
70°	93.0	95.9	98.8	101.7	104.7	107.8	111.0	114.3	117.6	120.8	123.1
72.5°	82.5	85.5	88.5	91.5	94.4	97.7	101.1	104.6	108.0	111.5	113.7
75°	66.4	69.5	72.7	75.9	79.1	82.4	86.1	89.7	93.3	96.9	99.3
77.5°	51.4	54.7	58.0	61.4	64.7	68.3	72.1	75.9	79.7	83.4	85.9
80°	42.1	45.5	48.9	52.3	55.8	59.4	63.2	66.9	70.7	74.5	77.0
82.5°	32.8	36.4	39.9	43.5	47.0	50.7	54.5	58.3	62.0	65.9	68.5
85°	20.5	24.1	27.6	31.2	34.9	38.6	42.5	46.3	50.1	54.1	56.6
87.5°	11.7	15.4	19.2	22.9	26.6	30.4	34.3	38.2	42.2	46.1	48.8
90°	7.6	12.1	16.7	21.3	25.8	30.4	34.9	39.4	43.9	48.4	51.5
92.5°	11.7	14.8	18.0	21.2	24.3	28.1	32.7	37.2	41.7	46.2	49.2
95°	30.6	29.9	29.2	28.5	27.9	29.4	32.9	36.6	40.2	43.8	46.7
97.5°	58.9	63.5	68.2	72.7	77.4	75.7	67.6	59.6	51.5	43.5	45.7
100°	80.6	84.6	88.7	92.8	96.9	93.4	82.5	71.7	60.7	49.8	50.4
102.5°	105.1	108.4	111.7	115.0	118.4	120.7	122.1	123.5	125.0	126.4	109.7
105°	143.5	145.8	148.1	150.5	152.8	155.8	159.5	163.2	166.9	170.6	173.7
107.5°	179.8	181.5	183.2	184.9	186.6	189.3	193.1	196.7	200.4	204.2	206.7
110°	204.0	205.5	207.0	208.6	210.0	212.6	216.2	219.9	223.5	227.1	229.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	227.5	229.1	230.7	232.4	234.0	236.4	239.5	242.7	245.8	249.0	250.9
115°	263.7	264.7	265.9	266.9	268.0	269.9	272.5	275.2	277.8	280.5	282.5
117.5°	296.6	297.5	298.4	299.3	300.1	302.0	304.8	307.5	310.3	313.1	314.9
120°	318.6	319.3	320.0	320.7	321.3	322.9	325.2	327.6	330.0	332.4	334.3
122.5°	339.5	339.7	340.1	340.4	340.7	342.1	344.5	347.1	349.5	352.0	353.9
125°	368.9	369.2	369.6	369.9	370.2	371.4	373.3	375.3	377.2	379.1	381.1
127.5°	397.1	397.1	397.2	397.2	397.2	398.3	400.4	402.5	404.6	406.8	408.2
130°	415.1	415.1	415.1	415.2	415.2	416.0	417.7	419.4	421.0	422.7	424.4
132.5°	431.8	431.9	432.0	432.1	432.2	433.0	434.5	436.0	437.5	439.0	440.5
135°	456.6	456.4	456.3	456.2	456.2	456.6	457.6	458.6	459.6	460.6	462.2
137.5°	478.7	478.7	478.7	478.7	478.6	478.9	479.7	480.5	481.2	481.9	483.4
140°	493.3	493.4	493.5	493.7	493.7	494.0	494.2	494.6	494.9	495.1	496.6
142.5°	506.0	506.4	506.7	507.0	507.4	507.6	507.7	507.8	507.8	507.9	509.2
145°	525.9	526.1	526.4	526.6	526.8	526.9	526.9	526.9	526.9	526.9	527.6
147.5°	541.8	542.3	542.8	543.3	543.8	544.0	543.9	543.8	543.6	543.6	543.7
150°	553.3	553.7	554.0	554.3	554.6	554.8	554.6	554.6	554.5	554.3	554.3
152.5°	562.7	563.0	563.4	563.6	563.9	564.0	563.9	563.7	563.5	563.3	563.5
155°	576.3	576.3	576.4	576.5	576.7	576.5	576.3	575.9	575.6	575.3	575.7
157.5°	587.7	587.6	587.5	587.5	587.4	587.2	586.9	586.5	586.1	585.8	586.4
160°	594.4	594.0	593.7	593.5	593.1	592.9	592.8	592.7	592.6	592.5	593.1
162.5°	600.3	599.9	599.5	599.2	598.8	598.5	598.3	598.3	598.2	598.1	598.7
165°	607.8	607.3	606.8	606.3	605.8	605.5	605.5	605.5	605.5	605.5	606.3
167.5°	613.8	613.3	612.7	612.2	611.6	611.3	611.3	611.2	611.1	611.1	612.0
170°	617.2	616.5	615.9	615.3	614.7	614.4	614.5	614.6	614.7	614.8	615.6
172.5°	619.4	618.7	618.2	617.5	616.9	616.6	616.8	616.9	616.9	617.0	617.9
175°	621.8	621.2	620.5	620.0	619.3	619.1	619.1	619.3	619.4	619.5	620.4
177.5°	622.9	622.3	621.7	621.2	620.6	620.4	620.5	620.7	620.9	621.0	621.7
180°	621.8	621.8	621.8	621.8	621.8	621.8	621.8	621.8	621.8	621.8	621.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6
2.5°	343.4	343.9	344.4	344.5	344.5	344.5	344.4	344.3
5°	342.5	343.2	343.9	344.2	344.1	344.0	343.9	343.8
7.5°	340.7	341.4	342.3	342.6	342.5	342.4	342.3	342.3
10°	338.8	339.6	340.4	340.7	340.6	340.6	340.5	340.4
12.5°	336.2	337.0	337.6	337.9	337.9	337.9	337.9	337.9
15°	331.5	332.2	333.0	333.4	333.3	333.2	333.1	333.0
17.5°	325.7	326.5	327.3	327.7	327.6	327.5	327.5	327.4
20°	321.2	322.1	322.9	323.4	323.4	323.4	323.4	323.4
22.5°	316.0	316.8	317.7	318.2	318.4	318.5	318.6	318.8
25°	307.9	308.8	309.8	310.3	310.4	310.5	310.5	310.6
27.5°	298.8	299.7	300.6	301.1	301.2	301.3	301.3	301.5
30°	292.4	293.4	294.3	294.9	295.1	295.3	295.5	295.6
32.5°	285.9	287.1	288.1	288.8	288.9	289.1	289.3	289.4
35°	275.7	276.8	278.0	278.8	279.0	279.2	279.6	279.8
37.5°	264.9	266.0	267.3	268.1	268.3	268.6	268.9	269.1
40°	257.3	258.5	259.8	260.7	261.0	261.4	261.7	262.0
42.5°	249.8	251.3	252.7	253.6	253.8	254.0	254.4	254.6
45°	238.3	239.8	241.2	242.1	242.6	243.0	243.4	243.9
47.5°	226.2	227.6	229.2	230.2	230.7	231.2	231.7	232.3
50°	217.6	219.3	221.0	222.2	222.7	223.1	223.7	224.2
52.5°	209.0	210.7	212.4	213.5	214.0	214.5	215.1	215.6
55°	196.0	197.7	199.4	200.6	201.1	201.5	202.1	202.6
57.5°	182.4	184.4	186.5	187.7	188.2	188.7	189.1	189.6
60°	173.0	175.0	176.9	178.2	179.0	179.6	180.3	181.0
62.5°	163.7	165.7	167.6	169.0	169.7	170.3	171.0	171.7
65°	149.4	151.6	153.7	155.1	155.8	156.5	157.2	157.8
67.5°	135.3	137.5	139.7	141.1	141.8	142.4	143.1	143.8
70°	125.4	127.8	130.0	131.5	132.1	132.7	133.3	133.9
72.5°	116.0	118.3	120.5	122.0	122.6	123.3	124.0	124.7
75°	101.7	104.0	106.5	108.0	108.8	109.6	110.4	111.1
77.5°	88.3	90.7	93.2	94.8	95.6	96.4	97.3	98.1
80°	79.7	82.2	84.8	86.4	87.1	87.8	88.5	89.1
82.5°	71.1	73.8	76.4	78.1	78.8	79.6	80.4	81.1
85°	59.2	61.7	64.3	66.0	66.9	67.8	68.6	69.5
87.5°	51.4	54.0	56.6	58.3	59.0	59.8	60.7	61.5
90°	54.6	57.7	60.9	62.9	63.8	64.7	65.6	66.4
92.5°	52.3	55.4	58.4	60.3	61.0	61.7	62.5	63.2
95°	49.7	52.6	55.5	57.5	58.3	59.2	60.1	61.0
97.5°	48.1	50.4	52.7	54.3	55.1	55.9	56.8	57.6
100°	50.9	51.4	52.0	52.7	53.3	54.1	54.8	55.4
102.5°	92.9	76.2	59.5	51.5	52.3	52.9	53.6	54.3
105°	176.8	179.8	182.9	182.9	179.9	176.8	173.8	170.7
107.5°	209.3	211.8	214.4	216.2	217.2	218.2	219.2	220.2
110°	231.5	233.7	235.8	237.4	238.4	239.4	240.4	241.4





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CATALOG NUMBER: S124DIP-S350D590U930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	252.7	254.5	256.4	257.9	259.0	260.1	261.1	262.2
115°	284.6	286.7	288.8	290.2	290.7	291.4	292.0	292.5
117.5°	316.6	318.3	320.1	321.2	321.9	322.5	323.2	323.8
120°	336.2	338.2	340.1	341.3	341.8	342.3	342.7	343.2
122.5°	355.7	357.6	359.4	360.5	360.9	361.3	361.7	362.2
125°	383.0	385.0	386.9	388.2	388.8	389.4	390.0	390.6
127.5°	409.8	411.2	412.7	413.7	414.2	414.7	415.2	415.7
130°	426.0	427.6	429.3	430.4	430.9	431.4	431.9	432.4
132.5°	442.1	443.7	445.3	446.3	446.7	447.2	447.6	448.0
135°	463.8	465.4	466.9	468.1	468.8	469.5	470.3	471.0
137.5°	484.9	486.3	487.9	488.8	489.1	489.5	489.8	490.2
140°	498.0	499.5	500.8	501.8	502.4	502.9	503.4	503.9
142.5°	510.3	511.5	512.7	513.6	513.9	514.3	514.7	515.0
145°	528.2	528.8	529.4	529.9	530.5	531.1	531.7	532.1
147.5°	543.9	544.0	544.2	544.5	544.8	545.2	545.6	545.9
150°	554.3	554.3	554.3	554.4	554.5	554.6	554.7	554.8
152.5°	563.6	563.8	563.9	564.0	563.9	563.9	563.8	563.8
155°	576.1	576.5	576.9	577.0	576.7	576.3	576.1	575.8
157.5°	586.9	587.4	587.9	587.9	587.4	586.9	586.4	585.8
160°	593.7	594.4	595.0	595.0	594.4	593.7	593.1	592.5
162.5°	599.3	599.9	600.5	600.5	599.8	599.1	598.4	597.7
165°	607.2	608.0	608.9	608.8	607.8	606.9	606.0	605.0
167.5°	612.9	613.8	614.7	614.7	613.7	612.6	611.6	610.6
170°	616.4	617.3	618.2	618.0	617.0	616.0	614.9	613.9
172.5°	618.7	619.5	620.4	620.2	619.1	618.0	616.9	615.7
175°	621.3	622.2	623.2	623.1	621.8	620.5	619.3	618.1
177.5°	622.4	623.1	623.7	623.5	622.6	621.6	620.5	619.5
180°	621.8	621.8	621.8	621.8	621.8	621.8	621.8	621.8

(END OF REPORT)