

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: P332503-940

Luminaire Tested: **S124DIP-S350D590U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332503-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S350D590U940-4F0-1E-UDD-D1  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 590 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3111.3 lumens  
Efficiency: N/A  
Efficacy: 121.5 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

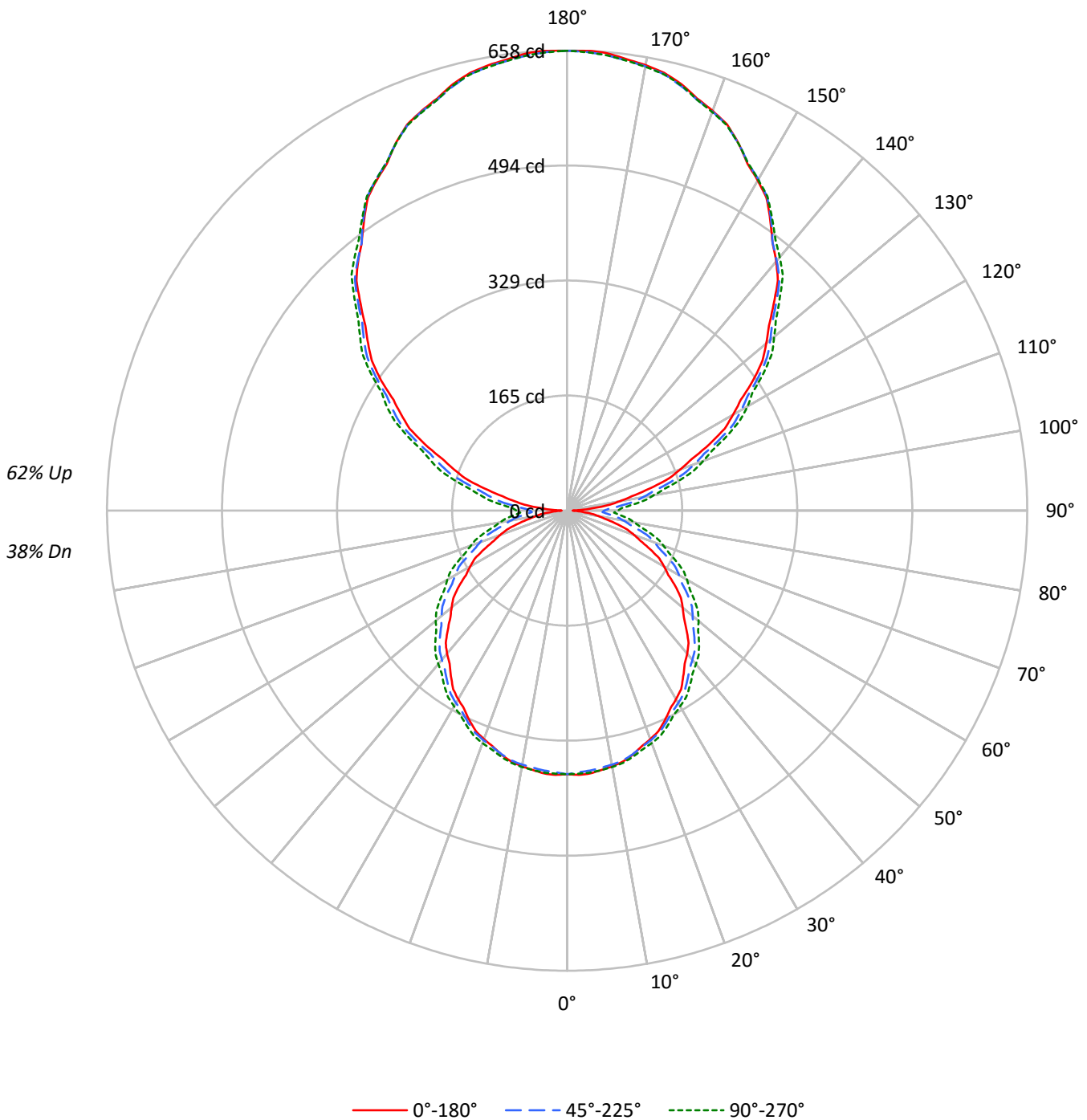
Input Watts (W): 25.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45	38
1	94	90	86	82	85	82	78	75	66	64	61	52	50	49	39	38	37	31
2	86	78	72	66	77	71	65	61	57	53	50	45	42	40	34	32	30	25
3	78	68	61	55	70	62	56	50	50	46	42	40	36	33	30	27	25	21
4	71	60	52	46	64	55	48	42	44	39	35	35	31	28	26	24	22	18
5	65	53	45	39	59	49	41	36	40	34	30	31	27	24	24	21	19	15
6	60	48	40	34	54	43	36	31	36	30	26	28	24	21	21	18	16	13
7	55	43	35	29	50	39	32	27	32	27	23	26	22	19	19	17	14	12
8	51	39	31	26	46	35	29	24	29	24	20	23	19	16	18	15	13	10
9	47	35	28	23	43	32	26	21	27	22	18	21	17	15	16	14	12	9
10	44	32	25	20	40	30	23	19	24	19	16	20	16	13	15	12	10	8

**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	1.1
10°-20°	102.3	3.3
20°-30°	154.6	5.0
30°-40°	187.1	6.0
40°-50°	197.8	6.4
50°-60°	186.2	6.0
60°-70°	154.4	5.0
70°-80°	108.5	3.5
80°-90°	63.3	2.0
90°-100°	79.8	2.6
100°-110°	155.4	5.0
110°-120°	236.2	7.6
120°-130°	297.8	9.6
130°-140°	327.4	10.5
140°-150°	318.2	10.2
150°-160°	266.9	8.6
160°-170°	177.6	5.7
170°-180°	62.2	2.0
0°-30°	292.6	9.4
0°-40°	479.7	15.4
0°-60°	863.6	27.8
0°-90°	1189.8	38.2
90°-120°	471.4	15.2
90°-150°	1414.8	45.5
90°-180°	1921.0	61.7
0°-180°	3111.3	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°	8	31	53	68	73	6
95°	36	55	75	88	92	38
105°	122	132	149	161	166	130
115°	224	229	241	249	252	221
125°	325	325	334	341	343	289
135°	417	420	423	429	430	323
145°	506	508	508	510	511	317
155°	580	580	579	581	579	267
165°	631	630	629	631	630	178
175°	657	654	654	657	654	62
180°	658	658	658	658	658	



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**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°	12.8	16.9	21.0	25.1	29.1	33.3	37.5	41.8	46.2	50.5	53.3
90°	8.3	13.3	18.3	23.3	28.3	33.3	38.2	43.1	48.1	53.0	56.4
92.5°	17.3	22.1	26.9	31.7	36.5	41.2	45.9	50.6	55.2	59.9	63.0
95°	36.0	40.1	44.2	48.3	52.4	56.8	61.4	66.1	70.7	75.3	78.2
97.5°	58.3	61.8	65.3	68.8	72.2	76.3	81.1	85.8	90.5	95.2	98.1
100°	75.9	78.7	81.6	84.5	87.4	91.2	95.9	100.6	105.2	109.9	112.6
102.5°	94.5	96.8	99.2	101.5	103.8	107.3	111.7	116.3	120.7	125.3	128.0
105°	122.3	124.3	126.3	128.2	130.3	133.2	137.1	141.1	145.0	148.9	151.6
107.5°	152.2	153.9	155.6	157.2	158.9	161.4	164.8	168.1	171.5	174.9	177.5
110°	172.2	173.8	175.3	176.8	178.3	180.7	183.9	187.1	190.3	193.4	195.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	193.1	194.2	195.5	196.7	197.9	199.9	202.9	205.8	208.7	211.7	213.7
115°	224.3	225.2	226.0	226.9	227.7	229.4	232.2	235.1	237.8	240.6	242.5
117.5°	254.1	254.7	255.3	255.9	256.5	258.1	260.7	263.4	266.0	268.7	270.2
120°	273.7	274.5	275.2	275.9	276.6	278.2	280.5	282.9	285.3	287.8	289.0
122.5°	294.4	294.7	294.9	295.2	295.4	296.8	299.2	301.6	304.0	306.4	307.8
125°	324.7	324.6	324.5	324.3	324.2	325.3	327.5	329.8	332.1	334.3	335.8
127.5°	352.3	352.6	352.8	353.0	353.3	354.3	355.9	357.5	359.1	360.7	362.2
130°	371.5	371.8	372.0	372.3	372.5	373.4	374.9	376.4	377.9	379.3	380.8
132.5°	391.5	391.6	391.7	391.9	392.1	392.7	393.8	394.9	396.0	397.2	398.5
135°	417.4	418.0	418.7	419.4	420.1	420.8	421.4	422.0	422.8	423.4	424.6
137.5°	446.0	446.3	446.5	446.7	446.9	447.3	447.8	448.4	448.8	449.3	450.4
140°	465.2	465.3	465.5	465.6	465.7	465.8	465.9	466.0	466.1	466.2	467.3
142.5°	482.3	482.5	482.8	483.0	483.1	483.2	483.0	483.0	482.8	482.6	483.7
145°	506.5	506.8	507.2	507.6	507.9	508.1	508.3	508.4	508.5	508.5	509.1
147.5°	530.5	530.9	531.4	531.8	532.3	532.4	532.4	532.3	532.2	532.1	532.1
150°	545.1	545.5	545.8	546.2	546.5	546.7	546.7	546.7	546.7	546.7	546.7
152.5°	558.7	558.8	559.1	559.4	559.6	559.8	559.9	560.0	560.1	560.2	560.4
155°	579.8	579.8	579.8	579.8	579.8	579.7	579.6	579.5	579.4	579.3	579.7
157.5°	597.7	597.4	597.3	597.1	596.9	596.7	596.7	596.7	596.7	596.6	597.0
160°	608.2	608.1	608.1	608.0	607.8	607.7	607.6	607.5	607.3	607.3	607.6
162.5°	618.0	617.8	617.4	617.2	616.9	616.6	616.5	616.4	616.4	616.2	616.8
165°	631.2	630.8	630.4	630.2	629.8	629.5	629.3	629.1	628.8	628.7	629.3
167.5°	641.2	640.8	640.2	639.8	639.4	639.1	639.1	639.2	639.2	639.2	639.9
170°	646.9	646.4	645.8	645.2	644.6	644.4	644.5	644.6	644.8	644.9	645.6
172.5°	650.9	650.5	650.1	649.6	649.1	648.9	648.9	648.9	648.9	649.0	649.7
175°	656.6	656.0	655.5	654.9	654.3	654.0	653.9	653.8	653.6	653.5	654.3
177.5°	658.4	658.0	657.5	657.1	656.6	656.4	656.4	656.4	656.4	656.4	657.0
180°	657.6	657.6	657.6	657.6	657.6	657.6	657.6	657.6	657.6	657.6	657.6



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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°	56.2	59.0	61.9	63.8	64.6	65.5	66.3	67.2
90°	59.7	63.1	66.6	68.8	69.7	70.7	71.7	72.7
92.5°	66.0	69.0	72.1	74.1	75.0	75.9	76.8	77.6
95°	81.1	84.0	86.9	88.7	89.5	90.4	91.2	92.1
97.5°	100.9	103.8	106.6	108.5	109.3	110.1	110.9	111.7
100°	115.4	118.2	120.9	122.6	123.3	123.9	124.6	125.3
102.5°	130.8	133.6	136.4	138.2	139.0	139.8	140.6	141.5
105°	154.3	156.9	159.6	161.5	162.6	163.7	164.8	165.9
107.5°	180.0	182.7	185.3	187.0	187.6	188.2	189.0	189.6
110°	197.2	199.2	201.2	202.7	203.8	204.8	205.9	207.1





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CATALOG NUMBER: S124DIP-S350D590U940-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	215.7	217.8	219.8	221.2	222.0	222.8	223.7	224.5
115°	244.5	246.4	248.3	249.6	250.1	250.7	251.3	251.8
117.5°	271.8	273.3	274.9	276.0	276.5	277.0	277.5	278.0
120°	290.3	291.7	292.9	294.1	295.1	296.0	297.0	298.0
122.5°	309.3	310.9	312.4	313.2	313.5	313.8	314.1	314.3
125°	337.3	338.9	340.5	341.4	341.8	342.1	342.4	342.8
127.5°	363.6	365.1	366.6	367.6	368.0	368.5	368.9	369.3
130°	382.3	383.8	385.2	386.0	386.1	386.2	386.4	386.5
132.5°	399.9	401.3	402.7	403.6	403.9	404.3	404.7	405.1
135°	426.0	427.2	428.5	429.3	429.4	429.7	429.9	430.2
137.5°	451.5	452.5	453.6	454.4	455.0	455.5	456.0	456.6
140°	468.4	469.5	470.6	471.4	471.7	472.1	472.4	472.8
142.5°	484.7	485.7	486.8	487.5	487.9	488.2	488.7	489.0
145°	509.5	510.0	510.4	510.6	510.7	510.7	510.8	510.8
147.5°	532.1	532.0	532.0	532.1	532.3	532.4	532.7	532.9
150°	546.7	546.7	546.7	546.7	546.5	546.4	546.4	546.3
152.5°	560.7	561.0	561.2	561.2	561.0	560.6	560.4	560.1
155°	580.1	580.6	581.1	581.1	580.6	580.1	579.7	579.3
157.5°	597.4	597.7	598.1	598.0	597.6	597.3	596.8	596.5
160°	608.0	608.2	608.6	608.5	608.0	607.3	606.8	606.3
162.5°	617.4	618.0	618.7	618.7	618.1	617.5	617.0	616.4
165°	630.0	630.6	631.3	631.4	631.0	630.5	630.1	629.6
167.5°	640.5	641.2	641.9	641.9	641.2	640.5	639.8	639.1
170°	646.2	646.9	647.6	647.6	646.8	646.0	645.2	644.4
172.5°	650.5	651.3	652.0	652.0	651.2	650.4	649.6	648.9
175°	655.1	655.9	656.7	656.7	655.9	655.1	654.3	653.5
177.5°	657.6	658.3	658.9	658.9	658.2	657.5	656.7	655.9
180°	657.6	657.6	657.6	657.6	657.6	657.6	657.6	657.6

(END OF REPORT)