

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: P332504-935

Luminaire Tested: **S124DIP-S350D590U935-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332504-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S350D590U935-4F0-1E-UDD-D4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 590 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3060.2 lumens  
Efficiency: N/A  
Efficacy: 119.5 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

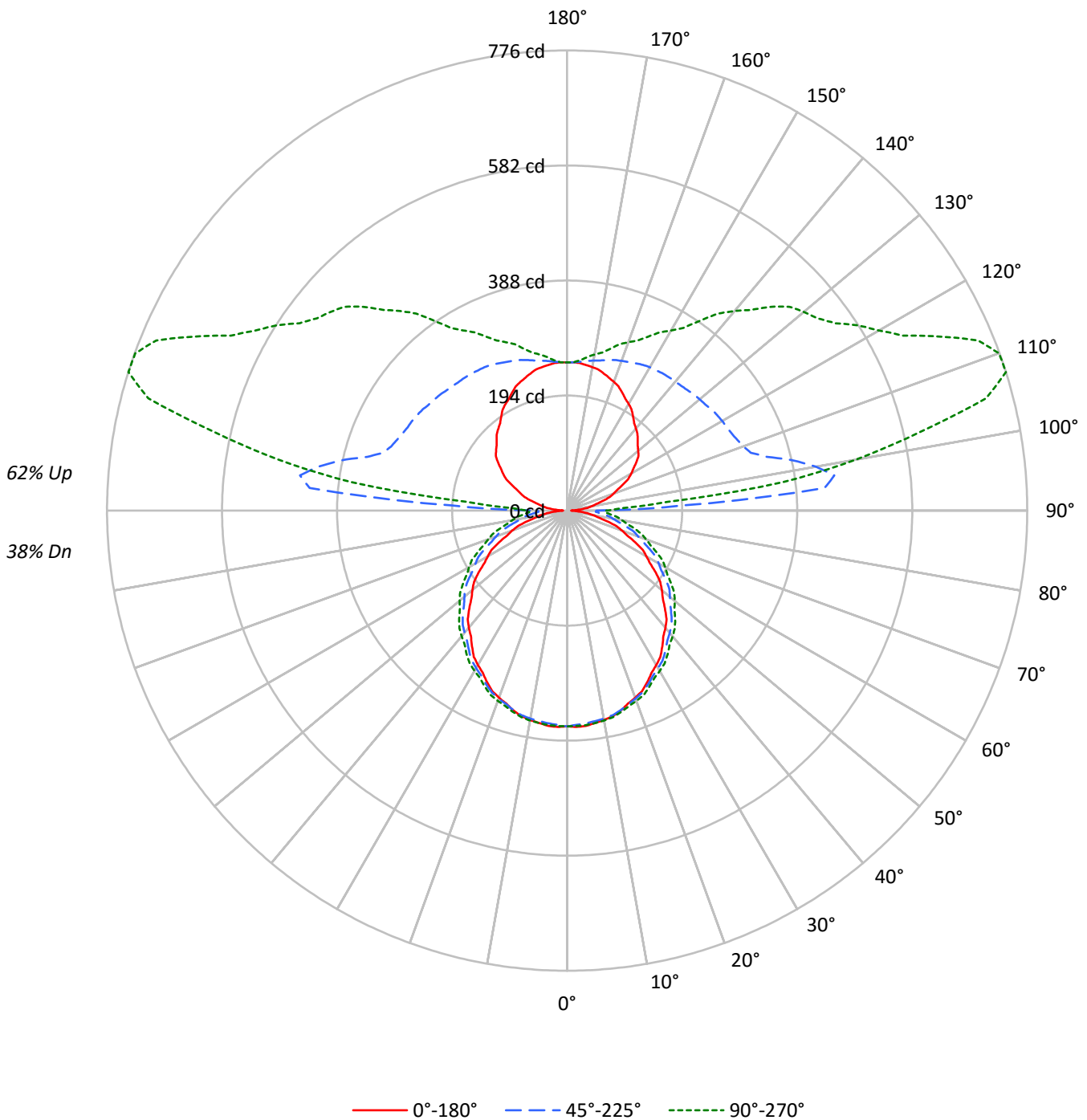
Input Watts (W): 25.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	94	94	94	94	76	76	76	60	60	60	45	45	45	38
1	94	90	86	82	85	81	78	75	66	63	61	51	50	48	38	37	36	30
2	85	78	71	66	77	71	65	61	57	53	50	45	42	40	33	31	30	25
3	78	68	61	55	70	62	55	50	50	45	42	39	36	33	29	27	25	20
4	71	60	52	46	64	55	48	42	44	39	35	35	31	28	26	23	21	17
5	65	53	45	39	59	48	41	36	39	34	30	31	27	24	23	21	18	15
6	60	48	39	34	54	43	36	31	35	30	26	28	24	21	21	18	16	13
7	55	43	35	29	50	39	32	27	32	27	23	25	21	18	19	16	14	11
8	51	39	31	26	46	35	29	24	29	24	20	23	19	16	17	15	13	10
9	47	35	28	23	43	32	26	21	27	21	18	21	17	15	16	13	11	9
10	44	32	25	20	40	30	23	19	24	19	16	19	16	13	15	12	10	8

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

	0°	45°	90°
0°	2938	2938	2938
5°	2948	2871	2880
10°	2929	2825	2823
15°	2902	2770	2755
20°	2863	2710	2690
25°	2819	2643	2617
30°	2770	2576	2543
35°	2716	2507	2478
40°	2672	2442	2410
45°	2607	2382	2352
50°	2553	2313	2291
55°	2496	2248	2220
60°	2408	2164	2153
65°	2309	2076	2073
70°	2192	1973	1979
75°	2029	1861	1894
80°	1846	1754	1809
85°	1616	1659	1762



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	34.5	1.1
10°-20°	98.7	3.2
20°-30°	149.3	4.9
30°-40°	180.7	5.9
40°-50°	191.0	6.2
50°-60°	179.7	5.9
60°-70°	149.1	4.9
70°-80°	104.7	3.4
80°-90°	60.6	2.0
90°-100°	215.7	7.0
100°-110°	401.8	13.1
110°-120°	354.1	11.6
120°-130°	293.0	9.6
130°-140°	240.3	7.9
140°-150°	181.2	5.9
150°-160°	126.8	4.1
160°-170°	74.6	2.4
170°-180°	24.3	0.8
0°-30°	282.5	9.2
0°-40°	463.2	15.1
0°-60°	833.9	27.2
0°-90°	1148.3	37.5
90°-120°	971.7	31.8
90°-150°	1686.2	55.1
90°-180°	1912.0	62.5
0°-180°	3060.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	364	364	364	364	364	
5°	364	363	360	363	363	35
15°	349	350	348	352	352	98
25°	320	322	323	327	328	147
35°	280	284	288	294	296	175
45°	233	241	249	255	258	180
55°	183	191	203	211	214	163
65°	126	139	153	163	167	125
75°	70	85	102	113	117	75
85°	22	39	57	69	73	23
90°	7	27	49	62	66	5
95°	22	70	436	244	170	22
105°	61	95	349	730	731	65
115°	104	134	306	580	694	103
125°	143	169	297	489	551	127
135°	168	200	287	427	486	130
145°	194	221	282	354	391	121
155°	220	237	274	310	324	101
165°	239	247	263	278	282	68
175°	250	250	252	255	254	24
180°	250	250	250	250	250	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9
2.5°	365.2	365.0	364.8	364.5	364.4	363.9	363.4	362.8	362.2	361.6	362.1
5°	364.4	364.0	363.8	363.5	363.3	362.8	362.1	361.5	360.9	360.2	361.0
7.5°	361.3	361.1	360.9	360.8	360.6	360.2	359.7	359.2	358.7	358.2	359.0
10°	358.6	358.5	358.4	358.3	358.3	358.0	357.6	357.1	356.6	356.2	357.0
12.5°	355.1	355.0	355.0	355.0	355.0	354.8	354.5	354.2	353.9	353.6	354.3
15°	349.2	349.4	349.5	349.6	349.7	349.6	349.2	349.0	348.7	348.4	349.2
17.5°	341.4	341.6	341.9	342.2	342.4	342.6	342.5	342.4	342.4	342.3	343.2
20°	335.8	336.0	336.4	336.7	336.9	337.1	337.2	337.3	337.3	337.4	338.4
22.5°	329.6	329.9	330.3	330.6	331.0	331.2	331.4	331.6	331.7	331.9	332.8
25°	319.5	320.0	320.6	321.2	321.7	322.1	322.4	322.6	322.9	323.2	324.2
27.5°	308.2	309.1	309.9	310.6	311.4	312.0	312.5	312.9	313.3	313.7	314.6
30°	300.7	301.5	302.2	302.9	303.7	304.4	305.0	305.6	306.3	306.9	307.9
32.5°	292.7	293.5	294.4	295.2	296.1	296.9	297.6	298.3	299.0	299.7	300.8
35°	279.6	280.7	281.7	282.8	284.0	284.9	285.9	286.7	287.7	288.5	289.8
37.5°	266.5	267.7	269.0	270.2	271.5	272.6	273.8	274.9	276.0	277.2	278.4
40°	258.0	259.2	260.4	261.5	262.7	263.9	265.2	266.5	267.7	269.0	270.4
42.5°	248.2	249.5	250.8	252.2	253.5	254.9	256.4	257.9	259.3	260.8	262.3
45°	233.1	234.8	236.5	238.2	240.0	241.7	243.4	245.1	246.8	248.6	250.1
47.5°	218.7	220.5	222.2	224.0	225.8	227.6	229.6	231.7	233.7	235.7	237.2
50°	208.3	210.3	212.2	214.2	216.2	218.2	220.2	222.2	224.2	226.2	228.0
52.5°	197.9	199.8	201.8	203.8	205.8	207.9	210.2	212.5	214.7	217.1	218.9
55°	182.6	184.5	186.4	188.3	190.2	192.5	195.2	197.9	200.6	203.4	205.2
57.5°	165.6	167.9	170.2	172.6	175.0	177.5	180.2	182.9	185.5	188.3	190.5
60°	154.5	156.8	159.2	161.5	163.8	166.5	169.5	172.5	175.5	178.5	180.6
62.5°	143.7	146.3	148.9	151.4	153.9	156.8	159.7	162.7	165.7	168.8	170.8
65°	126.3	129.2	132.2	135.0	137.9	140.9	144.0	147.1	150.2	153.3	155.5
67.5°	109.6	112.7	115.8	118.9	121.9	125.1	128.5	131.7	135.0	138.3	140.6
70°	98.2	101.3	104.4	107.5	110.6	113.8	117.3	120.7	124.2	127.6	130.0
72.5°	87.1	90.3	93.4	96.6	99.7	103.1	106.8	110.5	114.1	117.8	120.1
75°	70.1	73.4	76.8	80.2	83.5	87.0	90.9	94.7	98.5	102.3	104.9
77.5°	54.2	57.8	61.3	64.8	68.4	72.2	76.1	80.2	84.1	88.1	90.7
80°	44.4	48.0	51.7	55.3	58.9	62.7	66.7	70.7	74.6	78.7	81.4
82.5°	34.6	38.4	42.2	46.0	49.7	53.6	57.6	61.6	65.5	69.6	72.3
85°	21.6	25.4	29.2	33.0	36.9	40.7	44.9	48.9	53.0	57.1	59.8
87.5°	12.1	16.0	20.1	23.8	27.6	31.4	36.0	40.0	44.2	48.3	50.8
90°	7.0	11.6	16.7	20.8	25.0	28.7	35.6	39.4	44.3	49.2	51.3
92.5°	11.8	17.7	25.5	34.7	45.2	59.0	87.8	129.8	170.8	194.2	170.7
95°	21.5	26.0	33.8	43.2	58.0	82.0	128.5	212.7	333.8	435.8	449.5
97.5°	33.9	36.4	43.2	51.7	64.4	84.8	121.4	191.6	311.9	454.5	552.4
100°	41.8	44.2	49.9	58.2	69.9	88.5	121.1	180.1	283.8	425.9	554.1
102.5°	49.7	52.5	57.6	65.2	76.2	93.9	123.6	175.9	264.6	390.8	522.9
105°	61.1	64.4	68.7	76.4	87.0	103.8	130.8	174.9	247.0	349.1	466.7
107.5°	74.6	77.1	81.0	88.8	98.8	115.1	139.9	180.2	242.1	324.8	421.2
110°	83.3	85.6	89.3	96.4	106.6	122.0	146.8	184.3	241.6	316.0	398.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	91.6	93.8	97.7	104.4	114.3	129.7	153.5	188.9	242.5	310.8	384.2
115°	103.7	105.9	110.2	115.9	126.1	141.1	163.7	196.0	244.6	306.5	370.3
117.5°	116.5	118.4	121.9	127.8	137.1	152.4	173.7	203.5	247.2	303.5	362.7
120°	124.8	126.1	129.8	135.4	144.0	159.3	180.6	208.7	249.2	302.0	358.3
122.5°	132.7	133.7	137.2	142.2	151.4	166.1	187.3	213.7	251.2	299.9	353.4
125°	142.6	144.5	147.3	152.7	161.9	176.7	196.7	221.5	254.7	297.3	346.1
127.5°	151.6	153.1	156.6	162.6	172.3	187.0	205.8	228.3	257.0	293.8	336.7
130°	156.4	158.3	162.1	169.4	178.7	193.6	211.7	232.3	258.8	291.7	330.7
132.5°	161.5	163.0	168.1	175.0	184.9	199.0	216.8	236.7	260.5	290.0	325.4
135°	168.3	170.3	175.2	183.6	193.8	206.9	223.8	242.1	262.9	287.1	317.0
137.5°	175.5	177.3	182.5	190.5	201.0	213.4	228.8	245.6	263.7	285.1	309.9
140°	180.6	181.9	187.3	195.5	205.8	217.6	232.4	248.1	264.9	283.7	306.0
142.5°	185.7	187.2	192.2	200.1	210.1	221.4	235.7	250.2	266.0	283.1	302.9
145°	193.5	194.8	199.7	206.4	215.7	226.4	239.2	252.4	266.7	281.9	298.2
147.5°	202.2	202.6	206.8	213.8	221.4	231.2	243.1	254.7	267.2	280.2	294.1
150°	207.7	208.1	211.9	217.7	225.0	234.3	245.1	255.9	267.2	279.0	291.3
152.5°	212.5	212.5	216.5	222.0	228.5	237.0	246.7	256.7	266.4	277.0	288.1
155°	219.6	220.1	223.0	227.9	233.3	240.6	249.0	257.4	265.2	274.1	283.4
157.5°	226.5	226.5	229.3	233.1	237.8	243.6	250.7	257.4	264.0	271.0	278.6
160°	230.8	230.8	232.8	236.3	240.1	245.6	251.5	257.4	262.8	268.6	275.1
162.5°	234.8	234.4	235.9	239.0	242.5	246.8	252.3	257.4	261.6	266.3	271.9
165°	239.2	239.2	240.1	242.6	245.1	248.1	252.4	256.4	259.3	262.8	266.7
167.5°	243.6	243.1	243.6	245.5	246.8	249.1	252.4	255.2	257.0	259.2	262.0
170°	245.6	245.1	245.6	247.0	248.1	249.5	251.9	254.4	255.4	256.8	258.8
172.5°	247.5	247.0	247.1	248.2	248.8	249.9	251.6	253.7	253.8	254.5	256.1
175°	249.5	249.0	249.0	249.5	250.0	250.0	251.0	252.4	251.9	251.9	253.0
177.5°	250.4	250.0	249.6	250.0	250.0	250.0	250.4	251.2	250.4	250.4	250.8
180°	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9
2.5°	362.7	363.2	363.7	363.9	363.9	363.8	363.7	363.6
5°	361.7	362.4	363.2	363.5	363.4	363.3	363.2	363.1
7.5°	359.8	360.6	361.4	361.8	361.7	361.6	361.5	361.4
10°	357.8	358.6	359.5	359.8	359.7	359.6	359.6	359.5
12.5°	355.1	355.9	356.5	356.9	356.9	356.9	356.9	356.8
15°	350.1	350.9	351.7	352.1	352.0	351.9	351.8	351.7
17.5°	344.0	344.8	345.7	346.0	345.9	345.9	345.9	345.8
20°	339.2	340.2	341.0	341.6	341.6	341.6	341.6	341.6
22.5°	333.7	334.6	335.5	336.0	336.2	336.3	336.5	336.7
25°	325.2	326.1	327.2	327.7	327.8	327.9	328.0	328.0
27.5°	315.6	316.5	317.5	318.0	318.1	318.1	318.2	318.4
30°	308.8	309.9	310.8	311.4	311.6	311.9	312.0	312.2
32.5°	302.0	303.2	304.3	305.0	305.1	305.3	305.5	305.7
35°	291.1	292.3	293.6	294.4	294.6	294.9	295.2	295.5
37.5°	279.7	280.9	282.2	283.1	283.4	283.6	284.0	284.2
40°	271.7	273.0	274.4	275.3	275.6	276.0	276.4	276.7
42.5°	263.8	265.4	266.8	267.8	268.0	268.3	268.6	268.9
45°	251.7	253.2	254.8	255.7	256.2	256.7	257.1	257.5
47.5°	238.8	240.4	242.0	243.1	243.7	244.2	244.7	245.3
50°	229.8	231.6	233.4	234.6	235.1	235.7	236.3	236.8
52.5°	220.7	222.5	224.3	225.5	226.0	226.5	227.1	227.6
55°	207.0	208.8	210.6	211.8	212.3	212.8	213.4	214.0
57.5°	192.6	194.8	196.9	198.2	198.7	199.2	199.8	200.3
60°	182.7	184.8	186.8	188.2	189.0	189.7	190.5	191.1
62.5°	172.9	175.0	177.0	178.5	179.2	179.9	180.6	181.3
65°	157.7	160.1	162.3	163.8	164.5	165.2	166.0	166.7
67.5°	142.9	145.3	147.5	149.0	149.7	150.4	151.1	151.9
70°	132.4	134.9	137.3	138.9	139.5	140.2	140.8	141.4
72.5°	122.5	124.9	127.3	128.8	129.5	130.2	131.0	131.6
75°	107.4	109.9	112.4	114.1	114.9	115.7	116.6	117.4
77.5°	93.2	95.8	98.4	100.1	101.0	101.9	102.7	103.6
80°	84.1	86.8	89.5	91.3	92.0	92.7	93.4	94.1
82.5°	75.1	77.9	80.7	82.5	83.3	84.0	84.9	85.7
85°	62.5	65.2	67.9	69.7	70.6	71.5	72.4	73.4
87.5°	53.6	56.3	59.0	60.7	61.6	62.5	63.2	64.0
90°	54.4	57.5	60.7	62.3	63.5	64.7	65.0	65.8
92.5°	140.0	118.6	106.3	98.2	93.1	91.2	90.2	90.9
95°	404.3	330.6	267.3	221.2	197.9	183.6	175.6	170.0
97.5°	575.4	549.5	503.8	454.1	419.7	390.8	376.9	367.5
100°	628.2	640.5	618.9	584.0	541.9	512.6	498.5	495.2
102.5°	623.7	674.8	684.2	670.5	645.0	624.0	609.2	606.7
105°	581.5	668.7	719.6	741.2	743.0	739.8	733.7	731.4
107.5°	523.0	615.7	686.4	731.7	756.6	768.4	774.0	775.9
110°	487.6	574.6	648.0	703.4	739.0	760.3	769.9	775.1





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CATALOG NUMBER: S124DIP-S350D590U935-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	461.1	538.2	607.5	663.0	703.3	728.9	742.0	749.9
115°	433.8	496.1	555.6	604.1	643.5	673.6	689.9	694.5
117.5°	418.9	470.8	517.9	559.1	593.0	618.5	635.1	638.9
120°	411.6	459.1	500.2	536.3	565.1	587.4	600.9	607.0
122.5°	405.3	451.2	488.8	520.6	544.8	564.0	575.5	581.5
125°	395.0	438.9	474.6	502.7	522.9	537.7	547.6	551.0
127.5°	382.5	424.6	459.9	486.7	507.1	520.4	528.8	532.4
130°	373.1	413.5	448.5	475.6	496.4	509.1	517.5	521.1
132.5°	363.3	401.4	435.6	462.6	482.9	497.3	505.3	508.8
135°	349.4	382.8	414.1	439.7	459.9	474.2	482.6	486.1
137.5°	336.9	365.3	391.8	414.9	433.8	447.8	454.7	458.7
140°	329.8	354.0	377.3	398.8	416.4	427.7	435.0	439.4
142.5°	323.3	344.7	364.7	383.3	398.9	409.3	415.8	418.9
145°	314.4	331.7	347.0	361.2	373.8	382.5	387.8	390.6
147.5°	307.1	320.5	332.3	343.3	352.7	360.1	364.1	365.3
150°	303.1	314.4	324.2	333.0	340.9	347.2	350.2	350.7
152.5°	298.7	308.4	317.5	324.8	331.4	336.7	338.4	338.9
155°	292.2	300.1	307.5	313.3	318.3	322.2	323.6	323.6
157.5°	285.2	291.9	298.0	302.7	306.5	309.4	310.3	310.3
160°	280.9	286.4	291.7	295.7	298.6	301.6	302.0	302.0
162.5°	276.6	281.2	285.4	289.0	291.2	294.1	294.6	294.2
165°	270.6	273.5	277.0	279.5	281.5	283.4	282.9	282.4
167.5°	264.8	267.1	269.8	271.3	272.3	273.5	273.5	273.1
170°	261.3	262.8	264.8	266.2	267.2	267.7	267.2	267.2
172.5°	258.1	259.2	260.5	261.5	262.1	262.6	262.1	261.3
175°	253.9	254.4	255.4	255.4	255.4	256.4	255.4	254.4
177.5°	251.2	251.6	251.6	251.9	251.6	251.9	251.2	250.4
180°	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0

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