

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: P332514-930

Luminaire Tested: **S124DIP-S350D810U930-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332514-930  
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-S350D810U930-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 810 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3874.8 lumens  
Efficiency: N/A  
Efficacy: 124.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

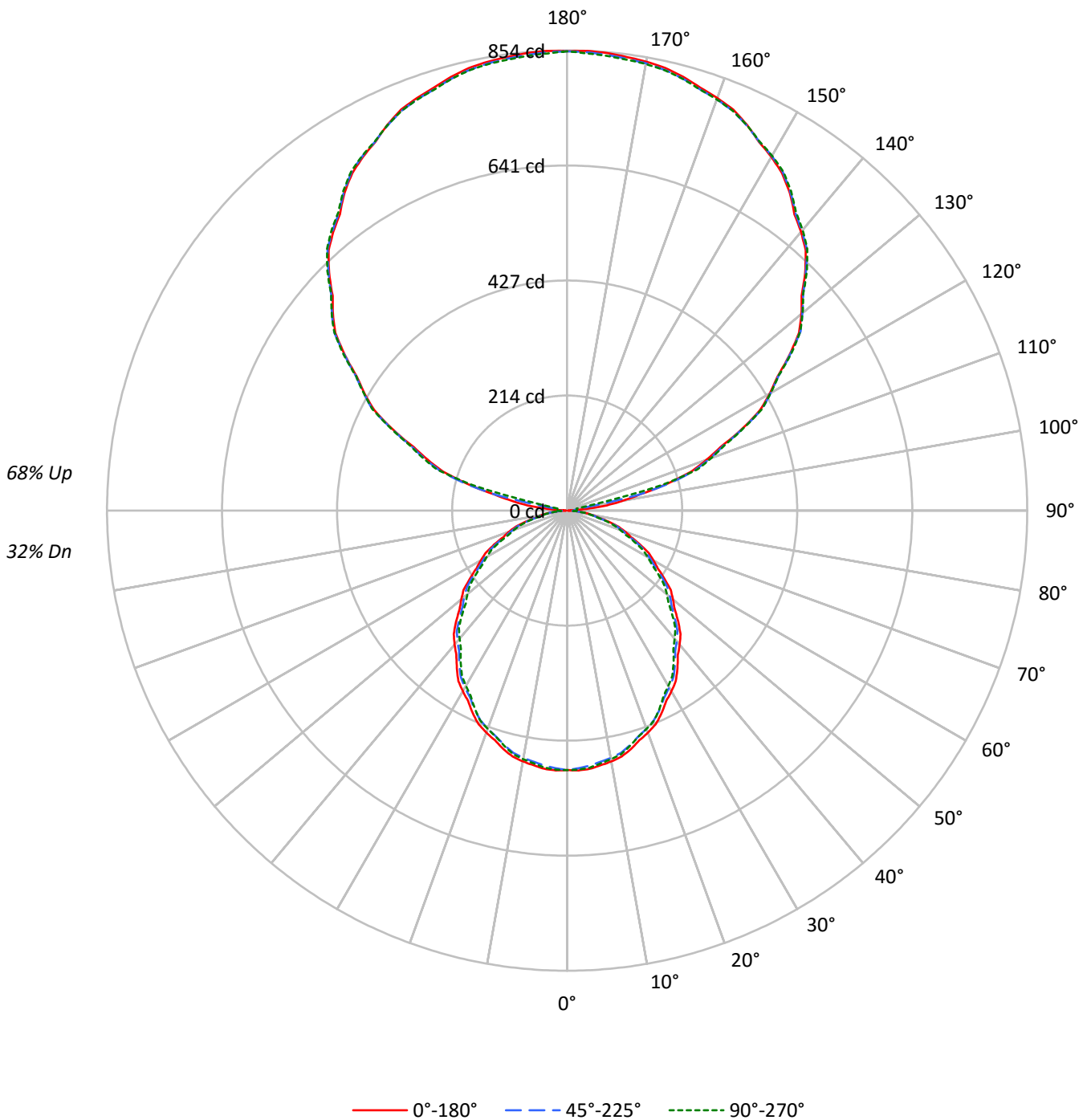
Input Watts (W): 31.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	50	30	10	0		
RCR																										
0	103	103	103	103	93	93	93	93	73	73	73	56	56	56	40	40	40	32					32			
1	94	89	86	82	84	81	77	75	64	62	60	49	47	46	35	34	33	27					27			
2	85	78	72	67	76	70	65	61	56	53	50	43	41	39	31	29	28	22					22			
3	78	69	61	56	70	62	56	51	49	45	42	38	35	33	27	25	24	19					19			
4	71	61	53	47	64	55	48	43	44	39	35	34	30	28	24	22	20	16					16			
5	65	54	46	40	58	49	42	37	39	34	30	30	27	24	22	20	18	14					14			
6	60	48	40	35	54	44	37	32	35	30	26	27	24	21	20	17	16	12					12			
7	55	43	36	30	50	39	33	28	32	27	23	25	21	18	18	16	14	11					11			
8	51	39	32	27	46	36	29	25	29	24	20	23	19	16	17	14	12	10					10			
9	48	36	28	24	43	33	26	22	26	22	18	21	17	15	15	13	11	9					9			
10	44	33	26	21	40	30	24	19	24	20	16	19	16	13	14	12	10	8					8			

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

	0°	45°	90°
0°	3888	3888	3888
5°	3900	3853	3881
10°	3875	3822	3841
15°	3828	3768	3777
20°	3766	3699	3703
25°	3695	3624	3613
30°	3608	3533	3500
35°	3517	3438	3392
40°	3424	3331	3270
45°	3327	3225	3164
50°	3218	3131	3034
55°	3102	3009	2911
60°	2984	2872	2785
65°	2854	2743	2632
70°	2705	2568	2469
75°	2480	2361	2299
80°	2208	2120	2064
85°	1936	1862	1815



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	45.4	1.2
10°-20°	127.8	3.3
20°-30°	188.1	4.9
30°-40°	218.7	5.6
40°-50°	218.7	5.6
50°-60°	191.3	4.9
60°-70°	142.1	3.7
70°-80°	80.7	2.1
80°-90°	25.8	0.7
90°-100°	29.1	0.8
100°-110°	185.9	4.8
110°-120°	355.6	9.2
120°-130°	451.4	11.6
130°-140°	482.9	12.5
140°-150°	451.6	11.7
150°-160°	364.2	9.4
160°-170°	234.9	6.1
170°-180°	81.0	2.1
0°-30°	361.2	9.3
0°-40°	579.9	15.0
0°-60°	989.8	25.5
0°-90°	1238.4	32.0
90°-120°	570.6	14.7
90°-150°	1956.4	50.5
90°-180°	2636.0	68.0
0°-180°	3874.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	482	482	482	482	482	
5°	481	480	475	479	479	46
15°	458	456	451	453	452	129
25°	415	412	407	407	406	191
35°	357	354	349	346	344	223
45°	291	288	282	278	277	225
55°	220	219	214	209	207	197
65°	149	147	144	140	138	148
75°	80	78	76	74	74	84
85°	21	21	20	20	20	23
90°	2	9	14	18	19	3
95°	35	15	14	18	18	45
105°	192	196	199	203	182	201
115°	358	360	360	361	361	352
125°	504	506	505	507	507	449
135°	625	624	627	628	629	481
145°	720	722	722	723	724	450
155°	790	790	789	791	789	364
165°	833	830	830	834	829	235
175°	852	849	849	854	847	81
180°	852	852	852	852	852	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	481.6	481.6	481.6	481.6	481.6	481.6	481.6	481.6	481.6	481.6	481.6
2.5°	482.8	482.7	482.4	482.2	482.0	481.5	480.8	480.0	479.3	478.5	479.2
5°	481.2	480.9	480.5	480.2	479.9	479.2	478.3	477.4	476.4	475.4	476.4
7.5°	476.8	476.4	476.1	475.7	475.4	474.7	473.6	472.6	471.6	470.5	471.2
10°	472.7	472.4	472.1	471.7	471.4	470.7	469.5	468.4	467.3	466.2	466.8
12.5°	467.5	467.2	466.8	466.4	466.1	465.4	464.1	463.0	461.8	460.6	461.4
15°	458.0	457.7	457.4	457.1	456.7	455.9	454.6	453.3	452.0	450.8	451.3
17.5°	446.7	446.3	445.9	445.5	445.0	444.2	443.0	441.7	440.5	439.3	439.6
20°	438.4	438.0	437.6	437.1	436.7	435.9	434.6	433.3	431.9	430.6	431.0
22.5°	429.4	428.8	428.3	427.7	427.1	426.2	424.9	423.7	422.4	421.1	421.6
25°	414.8	414.3	413.7	413.0	412.5	411.6	410.3	409.1	408.0	406.8	406.8
27.5°	398.2	397.5	397.0	396.3	395.7	394.8	393.7	392.6	391.5	390.4	390.2
30°	387.1	386.4	385.7	385.0	384.3	383.4	382.3	381.2	380.1	379.0	378.6
32.5°	375.4	374.7	374.1	373.5	372.8	371.9	370.8	369.6	368.4	367.2	366.8
35°	356.9	356.4	355.8	355.1	354.6	353.7	352.5	351.2	350.1	348.9	348.3
37.5°	337.6	337.0	336.5	336.0	335.4	334.5	333.2	331.9	330.6	329.3	328.6
40°	324.9	324.2	323.6	322.9	322.2	321.2	319.9	318.6	317.3	316.1	315.2
42.5°	311.4	311.0	310.5	310.1	309.7	308.8	307.4	305.9	304.5	303.1	302.1
45°	291.4	290.7	290.2	289.6	288.9	288.0	286.6	285.2	283.9	282.5	281.5
47.5°	270.4	270.0	269.6	269.2	268.8	268.0	266.7	265.4	264.2	262.9	261.8
50°	256.2	255.9	255.6	255.2	254.9	254.1	252.9	251.7	250.5	249.3	248.1
52.5°	242.4	241.9	241.5	241.1	240.7	239.9	238.6	237.3	236.0	234.8	233.7
55°	220.4	220.1	219.8	219.6	219.3	218.6	217.4	216.2	215.0	213.8	212.8
57.5°	199.3	199.1	198.8	198.5	198.2	197.5	196.2	195.1	193.9	192.7	191.8
60°	184.8	184.4	184.0	183.5	183.1	182.4	181.2	180.1	179.0	177.9	177.2
62.5°	170.6	170.3	169.9	169.6	169.2	168.4	167.2	166.1	164.9	163.7	163.0
65°	149.4	149.0	148.5	148.1	147.7	147.0	146.1	145.3	144.4	143.6	142.7
67.5°	127.9	127.5	127.1	126.7	126.3	125.7	124.9	124.1	123.3	122.4	121.6
70°	114.6	114.0	113.4	112.8	112.2	111.5	110.9	110.2	109.5	108.8	108.1
72.5°	100.4	99.8	99.2	98.7	98.0	97.4	96.9	96.4	95.8	95.2	94.7
75°	79.5	79.1	78.7	78.2	77.8	77.4	77.0	76.5	76.1	75.7	75.3
77.5°	59.5	59.4	59.1	58.9	58.8	58.5	58.1	57.7	57.3	57.0	56.8
80°	47.5	47.2	47.0	46.7	46.5	46.2	46.1	45.9	45.7	45.6	45.3
82.5°	35.7	35.6	35.5	35.4	35.2	35.1	35.1	35.1	35.1	35.1	35.0
85°	20.9	20.9	20.9	20.9	20.9	20.8	20.5	20.4	20.2	20.1	20.1
87.5°	8.4	8.6	8.9	9.1	9.4	9.6	9.7	9.9	10.0	10.2	10.4
90°	1.9	3.5	5.1	6.6	8.2	9.5	10.6	11.7	12.9	14.0	14.8
92.5°	8.1	8.2	8.2	8.3	8.4	9.0	10.1	11.3	12.4	13.5	14.3
95°	35.1	30.2	25.4	20.6	15.8	13.5	13.6	13.8	13.9	14.0	14.8
97.5°	74.4	77.5	80.5	83.5	86.5	80.1	64.2	48.4	32.6	16.8	16.9
100°	104.5	107.1	109.7	112.2	114.7	106.2	86.7	67.2	47.6	28.0	25.6
102.5°	138.2	140.1	141.9	143.8	145.7	145.4	142.8	140.2	137.7	135.2	109.2
105°	191.8	192.7	193.6	194.4	195.3	196.1	196.7	197.5	198.2	198.9	200.2
107.5°	241.7	242.1	242.6	243.0	243.4	244.1	245.1	246.1	247.0	248.0	248.6
110°	275.4	275.8	276.2	276.6	277.1	277.7	278.6	279.4	280.3	281.1	281.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	308.0	308.8	309.6	310.3	311.1	311.7	312.1	312.4	312.8	313.2	313.2
115°	358.2	358.7	359.1	359.5	360.0	360.1	360.0	359.8	359.7	359.5	359.8
117.5°	403.5	404.1	404.6	405.2	405.8	406.3	406.5	406.8	407.2	407.5	407.4
120°	434.1	434.7	435.3	435.9	436.3	436.6	436.4	436.3	436.2	436.0	436.3
122.5°	462.7	463.0	463.3	463.7	464.1	464.3	464.5	464.7	464.9	465.1	465.3
125°	503.6	504.2	504.8	505.3	505.9	506.0	505.7	505.5	505.2	504.9	505.3
127.5°	542.3	542.5	542.7	542.8	542.9	543.3	544.0	544.6	545.3	545.9	545.8
130°	567.4	567.5	567.6	567.8	567.9	568.2	568.6	569.1	569.5	569.9	570.1
132.5°	590.3	590.5	590.8	591.1	591.3	591.7	592.2	592.8	593.3	593.9	594.0
135°	624.8	624.6	624.4	624.3	624.2	624.4	624.9	625.5	626.1	626.6	626.9
137.5°	655.2	655.3	655.3	655.3	655.4	655.7	656.4	657.0	657.6	658.3	658.6
140°	675.1	675.4	675.6	676.0	676.2	676.5	676.8	677.1	677.4	677.6	678.1
142.5°	692.9	693.4	694.0	694.5	695.0	695.3	695.5	695.7	695.9	696.0	696.3
145°	720.3	720.8	721.2	721.6	722.0	722.3	722.3	722.3	722.3	722.3	722.4
147.5°	742.2	743.0	743.7	744.5	745.3	745.7	745.5	745.3	745.2	745.1	745.2
150°	758.0	758.6	759.1	759.7	760.2	760.4	760.3	760.2	760.0	759.9	759.9
152.5°	771.2	771.7	772.1	772.6	773.1	773.1	772.9	772.7	772.3	772.1	772.3
155°	789.9	789.9	790.1	790.3	790.4	790.3	789.9	789.4	789.0	788.6	789.1
157.5°	805.5	805.4	805.4	805.3	805.2	804.9	804.4	804.0	803.5	803.0	803.7
160°	814.7	814.2	813.8	813.4	813.0	812.7	812.6	812.4	812.3	812.1	813.0
162.5°	822.9	822.3	821.7	821.3	820.7	820.4	820.2	820.1	819.9	819.8	820.7
165°	833.2	832.5	831.8	831.0	830.4	830.0	830.0	830.0	830.0	830.0	831.1
167.5°	841.3	840.6	839.8	839.1	838.4	838.0	837.9	837.8	837.7	837.6	838.9
170°	846.0	845.1	844.2	843.3	842.5	842.2	842.3	842.4	842.6	842.8	843.8
172.5°	849.0	848.2	847.3	846.4	845.6	845.2	845.4	845.5	845.6	845.8	846.9
175°	852.3	851.4	850.6	849.8	848.9	848.6	848.7	848.8	849.0	849.1	850.4
177.5°	853.9	853.0	852.2	851.4	850.7	850.4	850.6	850.8	851.1	851.3	852.2
180°	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	481.6	481.6	481.6	481.6	481.6	481.6	481.6	481.6
2.5°	479.9	480.6	481.3	481.6	481.5	481.4	481.4	481.3
5°	477.4	478.3	479.2	479.6	479.4	479.2	479.1	478.9
7.5°	472.0	472.8	473.5	473.9	473.8	473.6	473.5	473.4
10°	467.6	468.2	469.0	469.2	469.0	468.8	468.6	468.5
12.5°	462.1	462.8	463.7	463.9	463.7	463.4	463.2	462.9
15°	451.8	452.2	452.8	452.9	452.7	452.4	452.2	451.9
17.5°	439.9	440.3	440.6	440.7	440.5	440.3	440.2	440.0
20°	431.2	431.5	431.7	431.8	431.5	431.4	431.2	431.0
22.5°	422.0	422.5	423.0	423.1	422.7	422.4	422.1	421.8
25°	406.9	407.0	407.1	407.0	406.6	406.3	405.9	405.6
27.5°	390.0	389.8	389.6	389.2	388.8	388.4	387.9	387.5
30°	378.3	378.0	377.6	377.2	376.7	376.3	375.9	375.5
32.5°	366.4	366.0	365.6	365.2	364.8	364.3	363.9	363.5
35°	347.6	347.1	346.4	345.9	345.5	345.1	344.6	344.2
37.5°	328.0	327.3	326.7	326.1	325.5	325.0	324.4	323.8
40°	314.4	313.5	312.7	312.0	311.5	311.1	310.7	310.3
42.5°	301.1	300.1	299.1	298.5	298.2	297.9	297.6	297.3
45°	280.6	279.6	278.8	278.1	277.9	277.6	277.4	277.1
47.5°	260.7	259.7	258.6	257.8	257.1	256.5	255.8	255.2
50°	246.9	245.7	244.5	243.6	243.1	242.6	242.1	241.6
52.5°	232.7	231.6	230.6	229.7	229.0	228.4	227.7	227.1
55°	211.7	210.7	209.7	208.9	208.4	207.9	207.3	206.8
57.5°	190.8	189.8	188.8	188.1	187.6	187.1	186.6	186.1
60°	176.3	175.6	174.8	174.2	173.8	173.3	172.9	172.5
62.5°	162.3	161.6	160.9	160.3	159.9	159.5	159.1	158.6
65°	141.9	141.0	140.1	139.5	139.1	138.6	138.2	137.8
67.5°	120.7	119.9	119.1	118.6	118.5	118.4	118.3	118.1
70°	107.5	106.8	106.1	105.6	105.3	105.1	104.8	104.6
72.5°	94.2	93.6	93.0	92.6	92.4	92.1	91.9	91.6
75°	74.9	74.6	74.3	74.0	73.9	73.9	73.8	73.7
77.5°	56.7	56.7	56.6	56.4	56.2	55.9	55.7	55.5
80°	45.2	45.0	44.8	44.8	44.6	44.5	44.4	44.4
82.5°	34.8	34.7	34.7	34.6	34.5	34.3	34.2	34.2
85°	20.1	20.1	20.1	20.1	20.0	19.9	19.7	19.6
87.5°	10.5	10.8	10.9	11.0	11.1	11.1	11.2	11.3
90°	15.7	16.6	17.4	18.0	18.3	18.6	18.8	19.2
92.5°	15.2	16.1	16.9	17.4	17.4	17.4	17.5	17.6
95°	15.7	16.6	17.4	17.9	18.1	18.2	18.3	18.5
97.5°	17.0	17.1	17.2	17.3	17.4	17.5	17.7	17.9
100°	23.2	20.8	18.4	17.3	17.4	17.5	17.7	17.9
102.5°	83.2	57.2	31.2	18.3	18.3	18.3	18.3	18.3
105°	201.5	202.7	204.0	202.1	197.0	191.8	186.8	181.6
107.5°	249.2	249.8	250.5	251.0	251.6	252.1	252.7	253.2
110°	281.7	282.0	282.3	282.6	283.1	283.5	283.9	284.3





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CATALOG NUMBER: S124DIP-S350D810U930-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	313.2	313.1	313.0	313.2	313.8	314.4	314.9	315.4
115°	360.1	360.4	360.7	360.9	360.9	360.9	360.9	360.9
117.5°	407.3	407.3	407.2	407.2	407.2	407.1	407.0	407.0
120°	436.6	436.9	437.2	437.2	436.9	436.6	436.3	436.0
122.5°	465.5	465.6	465.8	465.7	465.5	465.1	464.9	464.6
125°	505.7	506.1	506.5	506.9	507.0	507.1	507.3	507.4
127.5°	545.8	545.7	545.6	545.5	545.4	545.3	545.2	545.0
130°	570.2	570.3	570.5	570.5	570.5	570.5	570.5	570.5
132.5°	594.2	594.3	594.4	594.4	594.4	594.2	594.1	594.0
135°	627.2	627.5	627.8	628.0	628.4	628.6	628.9	629.2
137.5°	658.8	659.2	659.5	659.6	659.5	659.4	659.3	659.3
140°	678.5	678.9	679.3	679.6	679.8	679.9	680.0	680.2
142.5°	696.6	696.9	697.2	697.4	697.4	697.5	697.5	697.5
145°	722.5	722.7	722.8	723.0	723.3	723.6	723.9	724.1
147.5°	745.3	745.4	745.5	745.7	745.8	745.9	746.1	746.2
150°	759.9	759.9	759.9	759.9	760.1	760.2	760.3	760.5
152.5°	772.6	772.8	773.0	773.1	773.0	772.9	772.8	772.7
155°	789.7	790.3	790.8	790.9	790.4	790.0	789.6	789.2
157.5°	804.5	805.2	805.9	805.9	805.2	804.5	803.7	803.0
160°	813.8	814.7	815.5	815.5	814.7	813.8	813.0	812.1
162.5°	821.5	822.3	823.2	823.1	822.1	821.2	820.3	819.3
165°	832.3	833.4	834.5	834.5	833.2	831.9	830.6	829.3
167.5°	840.2	841.4	842.6	842.5	841.1	839.7	838.3	836.9
170°	845.0	846.1	847.3	847.1	845.7	844.3	842.9	841.5
172.5°	848.1	849.2	850.4	850.1	848.6	847.1	845.5	844.0
175°	851.7	853.0	854.2	854.0	852.3	850.6	848.9	847.2
177.5°	853.1	854.0	854.9	854.7	853.3	852.0	850.6	849.2
180°	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3

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