

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: P332512

Luminaire Tested: **S124DIP-S350D810U835-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332512  
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-S350D810U835-4F0-1E-UDD-D1  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 810 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4248.4 lumens  
Efficiency: N/A  
Efficacy: 136.2 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

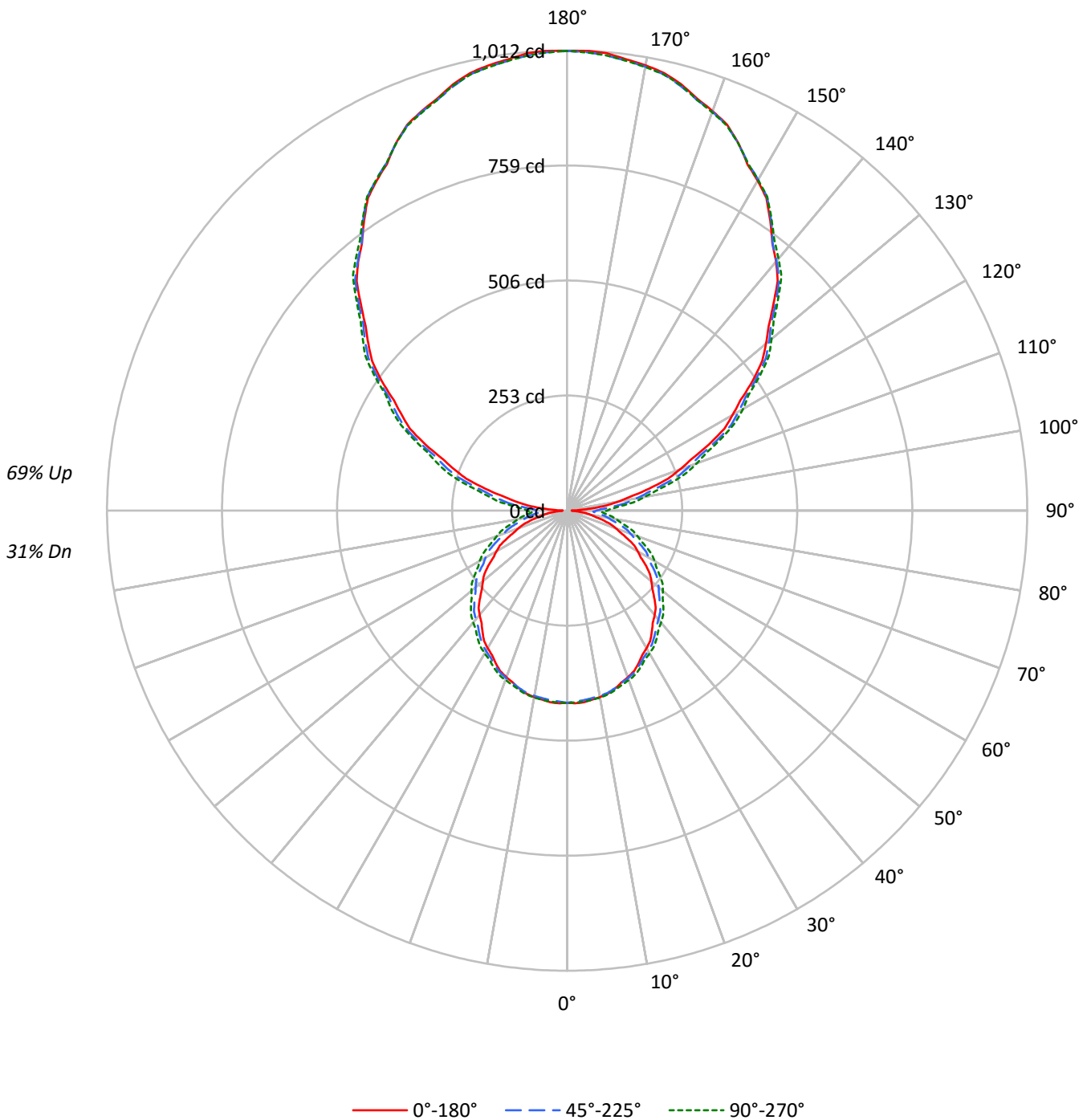
Input Watts (W): 31.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	103	103	103	103	92	92	92	92	73	73	73	55	55	55	39	39	39	31
1	93	88	84	81	83	80	76	73	63	61	58	48	46	45	33	33	32	25
2	84	77	71	65	75	69	64	59	55	51	48	41	39	37	29	27	26	21
3	77	67	60	54	69	61	54	49	48	43	40	36	33	31	25	24	22	17
4	70	59	51	45	63	53	47	41	42	38	34	32	29	26	23	20	19	14
5	64	53	45	39	57	47	40	35	38	33	29	29	25	22	20	18	16	12
6	59	47	39	33	53	42	35	30	34	29	25	26	22	19	18	16	14	11
7	54	42	34	29	49	38	31	26	31	25	22	23	20	17	17	14	12	10
8	50	38	31	25	45	35	28	23	28	23	19	21	18	15	15	13	11	8
9	47	35	27	22	42	31	25	21	25	20	17	20	16	13	14	12	10	8
10	44	32	25	20	39	29	23	18	23	18	15	18	14	12	13	11	9	7

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

	0°	45°	90°
0°	3412	3412	3412
5°	3423	3335	3344
10°	3402	3281	3278
15°	3371	3217	3200
20°	3325	3147	3124
25°	3274	3070	3039
30°	3217	2992	2954
35°	3154	2912	2878
40°	3103	2836	2800
45°	3027	2766	2732
50°	2964	2686	2661
55°	2899	2610	2577
60°	2796	2513	2501
65°	2682	2410	2407
70°	2547	2292	2298
75°	2356	2161	2199
80°	2145	2037	2102
85°	1878	1926	2046



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	40.0	0.9
10°-20°	114.7	2.7
20°-30°	173.4	4.1
30°-40°	209.8	4.9
40°-50°	221.8	5.2
50°-60°	208.8	4.9
60°-70°	173.2	4.1
70°-80°	121.7	2.9
80°-90°	71.8	1.7
90°-100°	107.5	2.5
100°-110°	227.7	5.4
110°-120°	355.5	8.4
120°-130°	453.5	10.7
130°-140°	501.4	11.8
140°-150°	488.8	11.5
150°-160°	410.3	9.7
160°-170°	273.0	6.4
170°-180°	95.6	2.2
0°-30°	328.1	7.7
0°-40°	537.9	12.7
0°-60°	968.5	22.8
0°-90°	1335.1	31.4
90°-120°	690.8	16.3
90°-150°	2134.4	50.2
90°-180°	2913.0	68.6
0°-180°	4248.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	423	423	423	423	423	
5°	423	422	418	422	422	40
15°	406	406	405	409	408	114
25°	371	374	375	380	381	171
35°	325	330	335	341	343	203
45°	271	280	289	296	299	209
55°	212	222	236	245	248	189
65°	147	162	178	189	194	145
75°	81	99	119	132	136	87
85°	25	45	66	80	85	27
90°	10	37	64	82	88	8
95°	53	76	101	115	120	57
105°	186	197	217	231	238	198
115°	344	348	362	371	374	339
125°	498	498	509	516	518	444
135°	641	646	649	655	656	496
145°	778	781	782	784	783	487
155°	891	891	890	893	890	410
165°	970	968	966	971	968	273
175°	1009	1006	1005	1010	1005	96
180°	1011	1011	1011	1011	1011	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7
2.5°	424.2	423.9	423.7	423.4	423.2	422.7	422.1	421.4	420.7	420.0	420.6
5°	423.2	422.8	422.5	422.2	421.9	421.4	420.6	419.9	419.2	418.4	419.3
7.5°	419.6	419.4	419.2	419.0	418.8	418.4	417.8	417.2	416.6	416.0	416.9
10°	416.5	416.4	416.3	416.2	416.1	415.8	415.3	414.7	414.2	413.7	414.6
12.5°	412.4	412.3	412.3	412.3	412.3	412.1	411.7	411.4	411.0	410.7	411.5
15°	405.6	405.8	405.9	406.0	406.1	406.0	405.6	405.3	405.0	404.7	405.6
17.5°	396.5	396.8	397.1	397.4	397.7	397.9	397.8	397.7	397.7	397.6	398.6
20°	390.0	390.3	390.7	391.0	391.3	391.5	391.6	391.7	391.8	391.9	393.0
22.5°	382.8	383.2	383.6	384.0	384.4	384.7	384.9	385.1	385.3	385.5	386.5
25°	371.1	371.7	372.4	373.0	373.6	374.1	374.4	374.7	375.0	375.4	376.5
27.5°	358.0	359.0	359.9	360.8	361.7	362.4	362.9	363.4	363.9	364.4	365.4
30°	349.3	350.2	351.0	351.8	352.7	353.5	354.2	354.9	355.7	356.4	357.6
32.5°	339.9	340.9	341.9	342.9	343.9	344.8	345.6	346.4	347.3	348.1	349.4
35°	324.7	326.0	327.2	328.5	329.8	330.9	332.0	333.0	334.1	335.1	336.6
37.5°	309.5	310.9	312.4	313.8	315.3	316.6	318.0	319.3	320.6	321.9	323.4
40°	299.6	301.0	302.4	303.7	305.1	306.5	308.0	309.5	310.9	312.4	314.0
42.5°	288.3	289.8	291.3	292.9	294.4	296.0	297.8	299.5	301.2	302.9	304.7
45°	270.7	272.7	274.7	276.7	278.7	280.7	282.7	284.7	286.7	288.7	290.5
47.5°	254.0	256.1	258.1	260.2	262.2	264.4	266.7	269.1	271.4	273.7	275.5
50°	241.9	244.2	246.5	248.8	251.1	253.4	255.8	258.1	260.4	262.7	264.8
52.5°	229.8	232.1	234.4	236.7	239.0	241.5	244.1	246.8	249.4	252.1	254.2
55°	212.1	214.3	216.5	218.7	220.9	223.6	226.7	229.9	233.0	236.2	238.3
57.5°	192.3	195.0	197.7	200.5	203.2	206.1	209.3	212.4	215.5	218.7	221.2
60°	179.4	182.1	184.9	187.6	190.3	193.4	196.9	200.4	203.8	207.3	209.7
62.5°	166.9	169.9	172.9	175.9	178.8	182.1	185.5	189.0	192.5	196.0	198.4
65°	146.7	150.1	153.5	156.8	160.2	163.7	167.2	170.8	174.4	178.0	180.6
67.5°	127.3	130.9	134.5	138.1	141.6	145.3	149.2	153.0	156.8	160.6	163.3
70°	114.1	117.6	121.2	124.8	128.4	132.2	136.2	140.2	144.2	148.2	151.0
72.5°	101.2	104.9	108.5	112.2	115.8	119.8	124.0	128.3	132.5	136.8	139.5
75°	81.4	85.3	89.2	93.1	97.0	101.1	105.6	110.0	114.4	118.8	121.8
77.5°	63.0	67.1	71.2	75.3	79.4	83.8	88.4	93.1	97.7	102.3	105.3
80°	51.6	55.8	60.0	64.2	68.4	72.8	77.5	82.1	86.7	91.4	94.5
82.5°	40.2	44.6	49.0	53.4	57.7	62.2	66.9	71.5	76.1	80.8	84.0
85°	25.1	29.5	33.9	38.3	42.8	47.3	52.1	56.8	61.5	66.3	69.4
87.5°	14.5	19.2	23.8	28.5	33.2	38.0	42.8	47.7	52.6	57.5	60.8
90°	9.9	16.0	22.2	28.3	34.4	40.4	46.3	52.2	58.1	64.1	68.2
92.5°	23.9	29.9	35.9	41.9	47.8	53.6	59.1	64.6	70.1	75.5	79.1
95°	53.1	58.1	63.1	68.2	73.2	78.5	84.0	89.5	95.1	100.6	104.0
97.5°	87.5	91.8	96.0	100.2	104.5	109.4	115.1	120.8	126.5	132.2	135.6
100°	114.7	118.1	121.5	124.9	128.4	132.9	138.6	144.3	149.9	155.6	158.8
102.5°	143.4	146.1	148.8	151.5	154.1	158.2	163.6	169.1	174.5	180.0	183.2
105°	186.4	188.7	191.0	193.2	195.5	199.0	203.5	208.1	212.7	217.3	220.5
107.5°	232.4	234.4	236.3	238.2	240.2	243.0	246.8	250.6	254.4	258.2	261.3
110°	263.3	265.2	267.0	268.8	270.6	273.3	276.8	280.3	283.8	287.3	289.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	295.5	296.9	298.2	299.6	301.0	303.3	306.5	309.7	312.9	316.1	318.3
115°	343.7	344.6	345.6	346.5	347.5	349.5	352.5	355.5	358.5	361.5	363.7
117.5°	389.6	390.3	391.0	391.7	392.4	394.2	397.1	400.0	402.9	405.8	407.4
120°	419.8	420.9	421.9	422.9	423.9	425.7	428.2	430.7	433.2	435.8	437.0
122.5°	451.7	452.1	452.4	452.8	453.1	454.6	457.2	459.9	462.5	465.1	466.7
125°	498.3	498.2	498.1	498.0	497.9	499.1	501.5	504.0	506.5	508.9	510.6
127.5°	540.9	541.3	541.8	542.2	542.6	543.7	545.4	547.1	548.9	550.6	552.2
130°	570.6	571.0	571.4	571.8	572.2	573.3	575.0	576.6	578.3	580.0	581.6
132.5°	601.2	601.5	601.8	602.0	602.3	603.1	604.3	605.5	606.7	607.9	609.3
135°	641.2	642.3	643.3	644.4	645.4	646.3	647.0	647.8	648.5	649.2	650.6
137.5°	685.3	685.7	686.1	686.5	686.8	687.4	688.0	688.6	689.3	689.9	691.0
140°	714.7	715.0	715.2	715.4	715.7	715.9	716.0	716.1	716.2	716.3	717.5
142.5°	741.2	741.6	741.9	742.2	742.5	742.6	742.4	742.2	742.0	741.8	743.0
145°	778.4	778.9	779.5	780.1	780.7	781.1	781.3	781.4	781.6	781.8	782.2
147.5°	815.3	816.0	816.7	817.4	818.2	818.5	818.3	818.2	818.0	817.9	817.9
150°	837.8	838.4	838.9	839.5	840.1	840.4	840.4	840.4	840.4	840.4	840.4
152.5°	858.7	859.0	859.4	859.8	860.2	860.5	860.6	860.8	860.9	861.1	861.5
155°	891.2	891.2	891.2	891.2	891.2	891.1	891.0	890.8	890.6	890.5	891.1
157.5°	918.8	918.4	918.1	917.8	917.5	917.3	917.3	917.3	917.2	917.2	917.7
160°	935.0	934.8	934.7	934.5	934.3	934.1	934.0	933.8	933.6	933.5	934.0
162.5°	950.0	949.6	949.1	948.7	948.2	947.9	947.7	947.6	947.4	947.2	948.2
165°	970.2	969.7	969.2	968.6	968.1	967.7	967.3	967.0	966.6	966.3	967.3
167.5°	985.7	984.9	984.2	983.5	982.8	982.4	982.4	982.5	982.5	982.5	983.6
170°	994.4	993.6	992.7	991.8	991.0	990.6	990.8	991.0	991.1	991.3	992.3
172.5°	1000.7	1000.0	999.2	998.5	997.8	997.4	997.5	997.5	997.5	997.6	998.7
175°	1009.3	1008.4	1007.5	1006.7	1005.8	1005.3	1005.1	1004.9	1004.8	1004.6	1005.8
177.5°	1012.1	1011.4	1010.7	1010.0	1009.3	1009.0	1009.0	1009.0	1009.0	1009.0	1009.9
180°	1010.8	1010.8	1010.8	1010.8	1010.8	1010.8	1010.8	1010.8	1010.8	1010.8	1010.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7
2.5°	421.2	421.8	422.4	422.6	422.6	422.5	422.4	422.3
5°	420.1	420.9	421.8	422.2	422.1	421.9	421.8	421.7
7.5°	417.9	418.8	419.8	420.2	420.1	420.0	419.9	419.8
10°	415.6	416.5	417.5	417.9	417.8	417.7	417.6	417.5
12.5°	412.4	413.3	414.1	414.5	414.5	414.5	414.5	414.4
15°	406.6	407.5	408.5	408.9	408.8	408.7	408.6	408.5
17.5°	399.5	400.5	401.5	401.9	401.8	401.7	401.7	401.6
20°	394.0	395.1	396.1	396.7	396.7	396.7	396.7	396.7
22.5°	387.6	388.6	389.7	390.3	390.5	390.6	390.8	391.0
25°	377.7	378.8	380.0	380.6	380.7	380.8	380.9	381.0
27.5°	366.5	367.6	368.7	369.3	369.4	369.5	369.6	369.8
30°	358.7	359.9	361.0	361.7	361.9	362.2	362.4	362.6
32.5°	350.7	352.1	353.4	354.2	354.4	354.6	354.8	355.0
35°	338.1	339.5	341.0	341.9	342.2	342.5	342.9	343.2
37.5°	324.9	326.3	327.8	328.8	329.1	329.4	329.8	330.1
40°	315.6	317.1	318.7	319.7	320.1	320.6	321.0	321.4
42.5°	306.4	308.2	309.9	311.0	311.3	311.6	312.0	312.3
45°	292.3	294.1	295.9	297.0	297.6	298.1	298.6	299.1
47.5°	277.4	279.2	281.1	282.3	283.0	283.6	284.2	284.9
50°	266.9	269.0	271.1	272.5	273.1	273.7	274.4	275.0
52.5°	256.3	258.4	260.5	261.9	262.5	263.1	263.8	264.4
55°	240.4	242.5	244.6	246.0	246.6	247.2	247.9	248.5
57.5°	223.7	226.2	228.7	230.2	230.8	231.4	232.0	232.6
60°	212.2	214.6	217.0	218.6	219.5	220.3	221.2	222.0
62.5°	200.8	203.2	205.6	207.3	208.1	208.9	209.8	210.6
65°	183.2	185.9	188.5	190.2	191.1	191.9	192.8	193.6
67.5°	166.0	168.7	171.3	173.1	173.9	174.7	175.5	176.4
70°	153.8	156.7	159.5	161.3	162.0	162.8	163.5	164.2
72.5°	142.3	145.1	147.8	149.6	150.4	151.2	152.1	152.9
75°	124.7	127.6	130.6	132.5	133.5	134.4	135.4	136.3
77.5°	108.3	111.3	114.3	116.3	117.3	118.3	119.3	120.3
80°	97.7	100.8	104.0	106.0	106.8	107.7	108.5	109.3
82.5°	87.2	90.5	93.7	95.8	96.7	97.6	98.6	99.5
85°	72.6	75.7	78.9	81.0	82.0	83.1	84.1	85.2
87.5°	64.0	67.3	70.5	72.7	73.7	74.6	75.6	76.6
90°	72.2	76.3	80.4	83.1	84.3	85.4	86.6	87.8
92.5°	82.7	86.3	89.9	92.2	93.3	94.3	95.4	96.4
95°	107.3	110.7	114.0	116.2	117.1	118.1	119.0	120.0
97.5°	139.0	142.4	145.7	147.9	148.8	149.7	150.6	151.5
100°	162.0	165.1	168.3	170.3	171.0	171.8	172.5	173.2
102.5°	186.4	189.7	192.9	195.0	196.0	197.0	197.9	198.9
105°	223.6	226.8	229.9	232.2	233.5	234.9	236.3	237.6
107.5°	264.3	267.4	270.5	272.4	273.1	273.8	274.5	275.3
110°	291.5	293.5	295.6	297.3	298.7	300.0	301.4	302.8





TEST NUMBER: P332512

CATALOG NUMBER: S124DIP-S350D810U835-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	320.6	322.9	325.1	326.7	327.7	328.6	329.6	330.5
115°	365.8	368.0	370.1	371.5	372.0	372.6	373.1	373.7
117.5°	409.0	410.6	412.2	413.2	413.7	414.2	414.7	415.2
120°	438.2	439.5	440.7	441.9	443.1	444.3	445.5	446.7
122.5°	468.2	469.7	471.2	472.0	472.2	472.3	472.4	472.5
125°	512.2	513.9	515.5	516.5	516.8	517.0	517.3	517.6
127.5°	553.7	555.3	556.8	557.8	558.2	558.7	559.1	559.6
130°	583.1	584.6	586.2	586.9	586.9	586.8	586.7	586.7
132.5°	610.8	612.3	613.7	614.6	615.0	615.3	615.7	616.1
135°	651.9	653.2	654.6	655.3	655.4	655.5	655.6	655.7
137.5°	692.1	693.2	694.2	695.1	695.7	696.4	697.0	697.6
140°	718.7	719.9	721.1	721.8	722.2	722.5	722.9	723.2
142.5°	744.1	745.3	746.4	747.2	747.6	748.0	748.5	748.9
145°	782.7	783.2	783.6	783.8	783.7	783.6	783.5	783.4
147.5°	817.8	817.7	817.7	817.7	817.9	818.1	818.2	818.4
150°	840.4	840.4	840.4	840.3	840.2	840.0	839.8	839.6
152.5°	861.9	862.3	862.7	862.7	862.3	861.8	861.4	860.9
155°	891.8	892.5	893.2	893.2	892.5	891.8	891.1	890.5
157.5°	918.2	918.8	919.3	919.2	918.7	918.1	917.5	916.9
160°	934.5	935.0	935.5	935.4	934.5	933.6	932.8	931.9
162.5°	949.1	950.0	951.0	951.0	950.1	949.3	948.4	947.5
165°	968.4	969.4	970.5	970.6	969.9	969.2	968.5	967.9
167.5°	984.6	985.7	986.7	986.7	985.6	984.5	983.5	982.4
170°	993.4	994.4	995.5	995.4	994.2	993.0	991.7	990.5
172.5°	999.9	1001.1	1002.3	1002.3	1001.1	999.8	998.6	997.4
175°	1007.0	1008.2	1009.5	1009.5	1008.2	1007.0	1005.8	1004.6
177.5°	1010.9	1011.9	1012.9	1012.8	1011.7	1010.6	1009.5	1008.3
180°	1010.8	1010.8	1010.8	1010.8	1010.8	1010.8	1010.8	1010.8

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