

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: P332503-830

Luminaire Tested: **S124DIP-S350D590U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332503-830  
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-S350D590U830-4F0-1E-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: 3288.7 lumens  
Efficiency: N/A  
Efficacy: 128.5 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

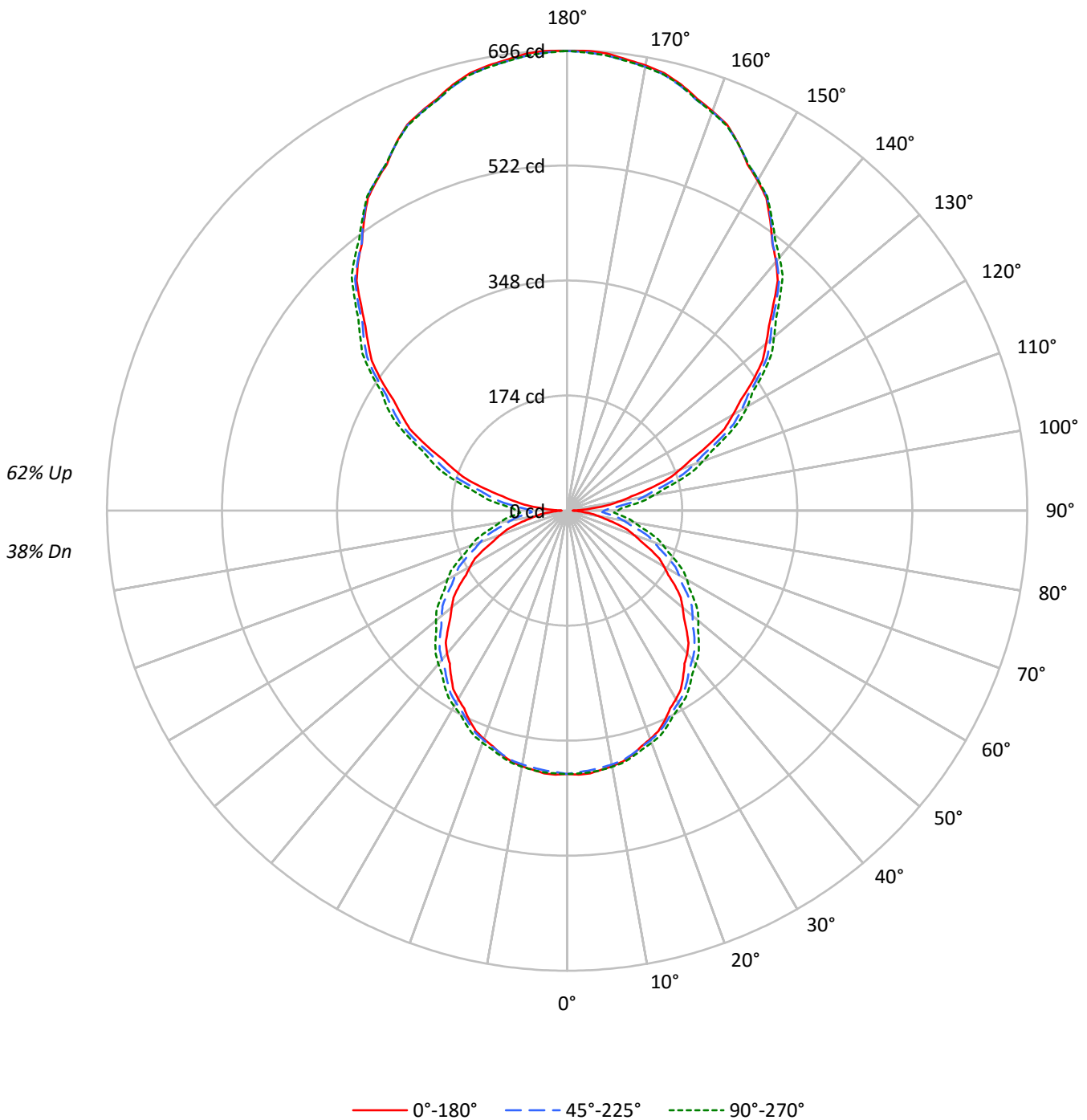
Input Watts (W): 25.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332503-830

CATALOG NUMBER: S124DIP-S350D590U830-4F0-1E-UDD-D1

### Luminous Intensity Polar Plot





TEST NUMBER: P332503-830

CATALOG NUMBER: S124DIP-S350D590U830-4F0-1E-UDD-D1

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45
1	94	90	86	82	85	82	78	75	66	64	61	52	50	49	39	38	37
2	86	78	72	66	77	71	65	61	57	53	50	45	42	40	34	32	30
3	78	68	61	55	70	62	56	50	50	46	42	40	36	33	30	27	25
4	71	60	52	46	64	55	48	42	44	39	35	35	31	28	26	24	22
5	65	53	45	39	59	49	41	36	40	34	30	31	27	24	24	21	19
6	60	48	40	34	54	43	36	31	36	30	26	28	24	21	21	18	16
7	55	43	35	29	50	39	32	27	32	27	23	26	22	19	19	17	14
8	51	39	31	26	46	35	29	24	29	24	20	23	19	16	18	15	13
9	47	35	28	23	43	32	26	21	27	22	18	21	17	15	16	14	12
10	44	32	25	20	40	30	23	19	24	19	16	20	16	13	15	12	10

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

	0°	45°	90°
0°	3216	3216	3216
5°	3227	3143	3152
10°	3207	3092	3090
15°	3177	3032	3016
20°	3134	2967	2944
25°	3086	2893	2865
30°	3032	2819	2784
35°	2972	2744	2713
40°	2925	2674	2639
45°	2853	2607	2575
50°	2794	2532	2508
55°	2732	2460	2429
60°	2635	2369	2357
65°	2529	2272	2269
70°	2400	2161	2166
75°	2220	2037	2074
80°	2021	1919	1981
85°	1773	1815	1928



TEST NUMBER: P332503-830

CATALOG NUMBER: S124DIP-S350D590U830-4F0-1E-UDD-D1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.7	1.1
10°-20°	108.1	3.3
20°-30°	163.4	5.0
30°-40°	197.8	6.0
40°-50°	209.1	6.4
50°-60°	196.8	6.0
60°-70°	163.2	5.0
70°-80°	114.7	3.5
80°-90°	66.9	2.0
90°-100°	84.3	2.6
100°-110°	164.3	5.0
110°-120°	249.6	7.6
120°-130°	314.8	9.6
130°-140°	346.0	10.5
140°-150°	336.4	10.2
150°-160°	282.1	8.6
160°-170°	187.7	5.7
170°-180°	65.7	2.0
0°-30°	309.3	9.4
0°-40°	507.0	15.4
0°-60°	912.9	27.8
0°-90°	1257.7	38.2
90°-120°	498.3	15.2
90°-150°	1495.4	45.5
90°-180°	2031.0	61.8
0°-180°	3288.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	398	398	398	398	398	
5°	399	397	394	398	398	38
15°	382	383	381	385	385	108
25°	350	352	354	358	359	161
35°	306	311	316	322	324	192
45°	255	264	272	279	282	197
55°	200	210	223	231	234	178
65°	138	153	168	178	182	137
75°	77	93	112	124	128	82
85°	24	42	62	75	80	25
90°	9	33	56	72	77	7
95°	38	58	80	93	97	41
105°	129	139	157	170	175	137
115°	237	242	254	263	266	234
125°	343	343	353	360	362	306
135°	441	444	448	453	455	341
145°	535	537	538	540	540	335
155°	613	613	612	614	612	282
165°	667	666	664	667	666	188
175°	694	691	691	694	691	66
180°	695	695	695	695	695	



TEST NUMBER: P332503-830

CATALOG NUMBER: S124DIP-S350D590U830-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
2.5°	399.8	399.5	399.4	399.1	398.9	398.4	397.8	397.2	396.5	395.9	396.4
5°	398.9	398.5	398.2	397.9	397.7	397.2	396.4	395.8	395.1	394.4	395.2
7.5°	395.5	395.3	395.1	394.9	394.7	394.4	393.8	393.2	392.7	392.1	392.9
10°	392.6	392.5	392.4	392.3	392.2	391.9	391.4	390.9	390.4	389.9	390.8
12.5°	388.7	388.6	388.6	388.6	388.6	388.4	388.0	387.8	387.4	387.1	387.9
15°	382.3	382.5	382.6	382.7	382.8	382.7	382.3	382.0	381.7	381.4	382.3
17.5°	373.7	374.0	374.3	374.6	374.8	375.0	374.9	374.8	374.8	374.8	375.7
20°	367.6	367.9	368.3	368.5	368.8	369.0	369.1	369.2	369.3	369.4	370.4
22.5°	360.8	361.2	361.6	361.9	362.3	362.6	362.8	363.0	363.2	363.4	364.3
25°	349.8	350.3	351.0	351.6	352.1	352.6	352.9	353.2	353.5	353.8	354.9
27.5°	337.4	338.4	339.2	340.1	340.9	341.6	342.0	342.5	343.0	343.5	344.4
30°	329.2	330.1	330.8	331.6	332.4	333.2	333.8	334.5	335.3	335.9	337.1
32.5°	320.4	321.3	322.3	323.2	324.1	325.0	325.7	326.5	327.3	328.1	329.3
35°	306.0	307.3	308.4	309.6	310.9	311.9	312.9	313.9	314.9	315.8	317.3
37.5°	291.7	293.0	294.5	295.8	297.2	298.4	299.7	301.0	302.2	303.4	304.8
40°	282.4	283.7	285.0	286.3	287.6	288.9	290.3	291.7	293.0	294.5	296.0
42.5°	271.7	273.1	274.6	276.1	277.5	279.0	280.7	282.3	283.9	285.5	287.2
45°	255.1	257.0	258.9	260.8	262.7	264.6	266.5	268.3	270.2	272.1	273.8
47.5°	239.4	241.4	243.3	245.2	247.1	249.2	251.4	253.6	255.8	258.0	259.7
50°	228.0	230.2	232.3	234.5	236.7	238.8	241.1	243.3	245.4	247.6	249.6
52.5°	216.6	218.8	220.9	223.1	225.3	227.6	230.1	232.6	235.1	237.6	239.6
55°	199.9	202.0	204.1	206.1	208.2	210.8	213.7	216.7	219.6	222.6	224.6
57.5°	181.3	183.8	186.3	189.0	191.5	194.3	197.3	200.2	203.1	206.1	208.5
60°	169.1	171.6	174.3	176.8	179.4	182.3	185.6	188.9	192.1	195.4	197.7
62.5°	157.3	160.1	163.0	165.8	168.5	171.6	174.8	178.1	181.4	184.7	187.0
65°	138.3	141.5	144.7	147.8	151.0	154.3	157.6	161.0	164.4	167.8	170.2
67.5°	120.0	123.4	126.8	130.2	133.5	137.0	140.6	144.2	147.8	151.4	153.9
70°	107.5	110.8	114.2	117.6	121.0	124.6	128.4	132.1	135.9	139.7	142.3
72.5°	95.4	98.9	102.3	105.8	109.1	112.9	116.9	120.9	124.9	128.9	131.5
75°	76.7	80.4	84.1	87.8	91.4	95.3	99.5	103.7	107.8	112.0	114.8
77.5°	59.4	63.2	67.1	71.0	74.8	79.0	83.3	87.8	92.1	96.4	99.2
80°	48.6	52.6	56.6	60.5	64.5	68.6	73.0	77.4	81.7	86.1	89.1
82.5°	37.9	42.0	46.2	50.3	54.4	58.6	63.1	67.4	71.7	76.2	79.2
85°	23.7	27.8	32.0	36.1	40.3	44.6	49.1	53.5	58.0	62.5	65.4
87.5°	13.6	17.8	22.1	26.5	30.7	35.2	39.7	44.2	48.8	53.3	56.4
90°	8.8	14.0	19.3	24.6	29.9	35.2	40.3	45.5	50.8	56.0	59.6
92.5°	18.3	23.4	28.5	33.6	38.5	43.5	48.5	53.4	58.3	63.3	66.5
95°	38.1	42.4	46.8	51.1	55.4	60.0	64.9	69.8	74.7	79.6	82.7
97.5°	61.6	65.3	69.0	72.7	76.3	80.7	85.7	90.7	95.7	100.7	103.7
100°	80.2	83.2	86.2	89.4	92.4	96.4	101.3	106.3	111.2	116.1	119.0
102.5°	99.9	102.4	104.8	107.3	109.7	113.4	118.1	122.9	127.6	132.4	135.3
105°	129.3	131.4	133.5	135.5	137.7	140.8	145.0	149.1	153.3	157.4	160.2
107.5°	160.9	162.7	164.5	166.2	168.0	170.6	174.2	177.7	181.3	184.8	187.6
110°	182.0	183.7	185.3	186.9	188.5	191.1	194.4	197.7	201.1	204.4	206.5



TEST NUMBER: P332503-830

CATALOG NUMBER: S124DIP-S350D590U830-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	204.1	205.3	206.6	207.9	209.2	211.3	214.4	217.5	220.6	223.8	225.9
115°	237.0	238.0	238.8	239.8	240.6	242.5	245.4	248.5	251.4	254.3	256.4
117.5°	268.6	269.2	269.8	270.5	271.1	272.8	275.6	278.4	281.2	284.0	285.6
120°	289.3	290.1	290.9	291.6	292.4	294.1	296.5	299.1	301.6	304.2	305.5
122.5°	311.2	311.5	311.7	312.0	312.3	313.7	316.2	318.8	321.3	323.9	325.4
125°	343.2	343.1	343.0	342.8	342.7	343.8	346.2	348.6	351.0	353.4	355.0
127.5°	372.4	372.7	373.0	373.2	373.4	374.5	376.2	377.9	379.6	381.3	382.9
130°	392.7	392.9	393.2	393.5	393.7	394.6	396.2	397.8	399.4	401.0	402.6
132.5°	413.8	414.0	414.1	414.2	414.4	415.1	416.2	417.5	418.6	419.8	421.2
135°	441.2	441.9	442.6	443.3	444.0	444.8	445.4	446.1	446.9	447.5	448.8
137.5°	471.5	471.7	471.9	472.2	472.4	472.8	473.3	473.9	474.4	474.9	476.1
140°	491.7	491.8	492.0	492.1	492.3	492.4	492.5	492.6	492.7	492.8	494.0
142.5°	509.8	510.0	510.3	510.5	510.7	510.8	510.6	510.5	510.3	510.1	511.2
145°	535.4	535.7	536.1	536.5	536.9	537.1	537.2	537.3	537.4	537.5	538.1
147.5°	560.7	561.2	561.7	562.1	562.6	562.8	562.7	562.6	562.5	562.4	562.4
150°	576.2	576.6	576.9	577.3	577.7	577.9	577.9	577.9	577.9	577.9	577.9
152.5°	590.5	590.7	591.0	591.3	591.5	591.7	591.8	591.9	592.0	592.1	592.4
155°	612.8	612.8	612.8	612.8	612.8	612.7	612.7	612.6	612.5	612.3	612.7
157.5°	631.8	631.5	631.3	631.1	630.9	630.7	630.7	630.7	630.7	630.7	631.0
160°	642.9	642.8	642.7	642.6	642.4	642.3	642.2	642.2	642.0	641.9	642.2
162.5°	653.3	653.0	652.6	652.3	652.1	651.8	651.7	651.6	651.5	651.3	652.0
165°	667.1	666.8	666.4	666.1	665.7	665.4	665.2	665.0	664.7	664.5	665.2
167.5°	677.8	677.3	676.7	676.3	675.8	675.5	675.5	675.6	675.6	675.6	676.4
170°	683.8	683.2	682.6	682.0	681.4	681.2	681.3	681.4	681.6	681.6	682.4
172.5°	688.1	687.6	687.1	686.6	686.1	685.9	685.9	685.9	685.9	686.0	686.7
175°	694.0	693.4	692.9	692.2	691.6	691.3	691.2	691.1	690.9	690.8	691.6
177.5°	696.0	695.5	695.0	694.6	694.0	693.8	693.8	693.8	693.8	693.8	694.5
180°	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1



TEST NUMBER: P332503-830

CATALOG NUMBER: S124DIP-S350D590U830-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
2.5°	397.0	397.6	398.1	398.3	398.3	398.2	398.1	398.0
5°	396.0	396.7	397.6	397.9	397.8	397.7	397.6	397.5
7.5°	393.9	394.7	395.7	396.1	396.0	395.9	395.8	395.7
10°	391.7	392.6	393.5	393.9	393.8	393.7	393.6	393.5
12.5°	388.7	389.6	390.3	390.7	390.7	390.7	390.7	390.6
15°	383.2	384.1	385.0	385.4	385.3	385.2	385.1	385.0
17.5°	376.5	377.5	378.4	378.8	378.7	378.6	378.6	378.5
20°	371.4	372.4	373.3	373.9	373.9	373.9	373.9	373.9
22.5°	365.3	366.3	367.3	367.9	368.1	368.2	368.3	368.5
25°	356.0	357.0	358.2	358.7	358.8	358.9	359.0	359.1
27.5°	345.4	346.5	347.5	348.1	348.2	348.3	348.4	348.6
30°	338.1	339.2	340.3	340.9	341.1	341.4	341.6	341.8
32.5°	330.5	331.9	333.1	333.8	334.0	334.2	334.4	334.6
35°	318.7	320.0	321.4	322.3	322.5	322.8	323.2	323.5
37.5°	306.2	307.6	309.0	309.9	310.2	310.5	310.9	311.1
40°	297.5	298.9	300.4	301.3	301.7	302.2	302.6	302.9
42.5°	288.8	290.5	292.1	293.1	293.4	293.7	294.1	294.4
45°	275.5	277.2	278.9	279.9	280.5	281.0	281.4	281.9
47.5°	261.5	263.2	264.9	266.1	266.7	267.3	267.9	268.5
50°	251.6	253.5	255.5	256.8	257.4	258.0	258.6	259.2
52.5°	241.6	243.6	245.5	246.9	247.4	248.0	248.6	249.2
55°	226.6	228.6	230.5	231.9	232.4	233.0	233.7	234.2
57.5°	210.8	213.2	215.6	217.0	217.5	218.1	218.7	219.2
60°	200.0	202.3	204.5	206.0	206.9	207.6	208.5	209.2
62.5°	189.3	191.5	193.8	195.4	196.1	196.9	197.7	198.5
65°	172.7	175.2	177.7	179.3	180.1	180.9	181.7	182.5
67.5°	156.5	159.0	161.5	163.2	163.9	164.7	165.4	166.3
70°	145.0	147.7	150.3	152.0	152.7	153.4	154.1	154.8
72.5°	134.1	136.8	139.3	141.0	141.8	142.5	143.4	144.1
75°	117.5	120.3	123.1	124.9	125.8	126.7	127.6	128.5
77.5°	102.1	104.9	107.7	109.6	110.6	111.5	112.4	113.4
80°	92.1	95.0	98.0	99.9	100.7	101.5	102.3	103.0
82.5°	82.2	85.3	88.3	90.3	91.1	92.0	92.9	93.8
85°	68.4	71.4	74.4	76.3	77.3	78.3	79.3	80.3
87.5°	59.4	62.4	65.4	67.4	68.2	69.2	70.1	71.1
90°	63.2	66.7	70.4	72.7	73.7	74.7	75.8	76.8
92.5°	69.7	73.0	76.3	78.3	79.3	80.2	81.2	82.0
95°	85.8	88.8	91.8	93.8	94.6	95.6	96.4	97.4
97.5°	106.7	109.7	112.7	114.7	115.6	116.4	117.3	118.1
100°	122.0	124.9	127.8	129.6	130.4	131.0	131.7	132.4
102.5°	138.3	141.2	144.2	146.1	146.9	147.8	148.6	149.6
105°	163.1	165.9	168.7	170.7	171.9	173.1	174.2	175.3
107.5°	190.3	193.1	195.9	197.7	198.3	199.0	199.7	200.4
110°	208.5	210.6	212.6	214.2	215.4	216.5	217.6	218.9





TEST NUMBER: P332503-830

CATALOG NUMBER: S124DIP-S350D590U830-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	228.0	230.2	232.3	233.8	234.7	235.5	236.5	237.3
115°	258.4	260.4	262.5	263.8	264.4	264.9	265.6	266.2
117.5°	287.3	288.9	290.6	291.7	292.3	292.8	293.3	293.9
120°	306.9	308.3	309.6	310.9	311.9	312.9	314.0	315.0
122.5°	327.0	328.6	330.2	331.0	331.4	331.7	332.0	332.2
125°	356.6	358.3	359.9	360.9	361.3	361.7	361.9	362.3
127.5°	384.4	385.9	387.5	388.5	389.0	389.5	389.9	390.4
130°	404.1	405.7	407.2	408.0	408.1	408.2	408.4	408.5
132.5°	422.7	424.1	425.7	426.6	427.0	427.3	427.8	428.2
135°	450.3	451.6	452.9	453.7	453.9	454.2	454.4	454.7
137.5°	477.2	478.3	479.5	480.3	480.9	481.5	482.0	482.6
140°	495.1	496.2	497.5	498.2	498.6	499.0	499.4	499.7
142.5°	512.4	513.4	514.5	515.3	515.7	516.0	516.5	516.9
145°	538.6	539.0	539.5	539.7	539.8	539.8	539.9	539.9
147.5°	562.4	562.3	562.3	562.4	562.6	562.8	563.1	563.3
150°	577.9	577.9	577.9	577.9	577.7	577.6	577.5	577.4
152.5°	592.7	593.0	593.2	593.2	593.0	592.6	592.3	592.0
155°	613.2	613.7	614.3	614.3	613.7	613.2	612.7	612.3
157.5°	631.4	631.8	632.2	632.1	631.7	631.3	630.8	630.5
160°	642.6	642.9	643.3	643.2	642.6	642.0	641.4	640.8
162.5°	652.6	653.3	653.9	653.9	653.4	652.7	652.1	651.6
165°	665.9	666.6	667.3	667.4	666.9	666.5	666.0	665.5
167.5°	677.0	677.8	678.5	678.4	677.8	677.0	676.3	675.5
170°	683.1	683.8	684.5	684.5	683.6	682.8	681.9	681.1
172.5°	687.6	688.4	689.2	689.2	688.3	687.5	686.6	685.9
175°	692.5	693.3	694.1	694.1	693.3	692.5	691.6	690.8
177.5°	695.1	695.8	696.4	696.4	695.7	694.9	694.1	693.3
180°	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1

(END OF REPORT)