

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: P332503-935

Luminaire Tested: **S124DIP-S350D590U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332503-935
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-S350D590U935-4F0-1E-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: 3004.1 lumens
Efficiency: N/A
Efficacy: 117.3 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

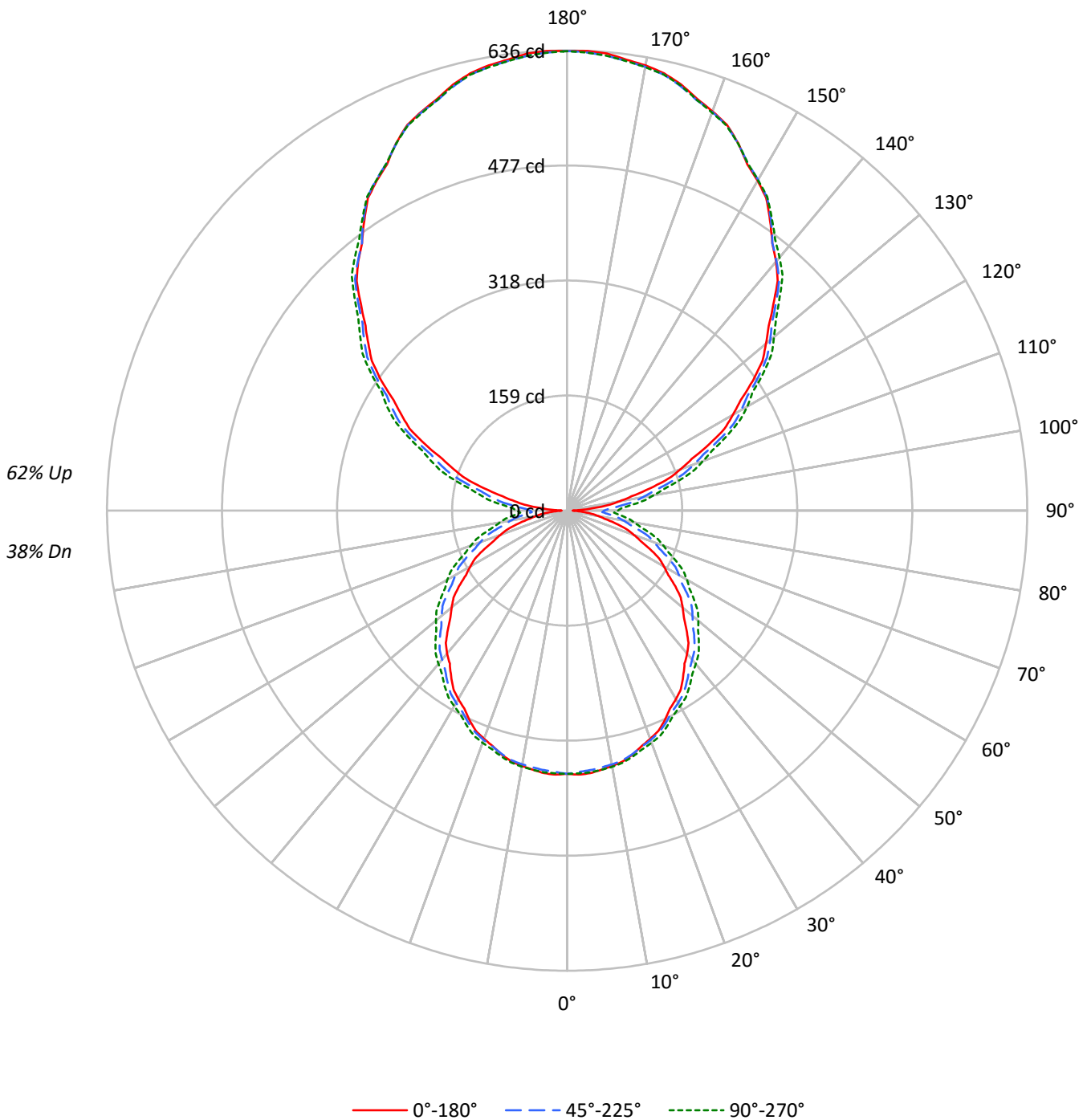
Input Watts (W): 25.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332503-935

CATALOG NUMBER: S124DIP-S350D590U935-4F0-1E-UDD-D1

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°	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



TEST NUMBER: P332503-935

CATALOG NUMBER: S124DIP-S350D590U935-4F0-1E-UDD-D1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	34.5	1.1
10°-20°	98.7	3.3
20°-30°	149.3	5.0
30°-40°	180.7	6.0
40°-50°	191.0	6.4
50°-60°	179.7	6.0
60°-70°	149.1	5.0
70°-80°	104.7	3.5
80°-90°	61.1	2.0
90°-100°	77.0	2.6
100°-110°	150.1	5.0
110°-120°	228.0	7.6
120°-130°	287.5	9.6
130°-140°	316.1	10.5
140°-150°	307.3	10.2
150°-160°	257.7	8.6
160°-170°	171.5	5.7
170°-180°	60.0	2.0
0°-30°	282.5	9.4
0°-40°	463.2	15.4
0°-60°	833.9	27.8
0°-90°	1148.9	38.2
90°-120°	455.2	15.2
90°-150°	1366.0	45.5
90°-180°	1855.0	61.7
0°-180°	3004.1	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°	8	30	51	65	70	6
95°	35	53	73	85	89	37
105°	118	127	144	155	160	126
115°	216	221	232	240	243	214
125°	314	314	323	329	331	279
135°	403	406	409	414	415	312
145°	489	490	491	493	493	306
155°	560	560	559	561	559	258
165°	609	608	607	610	608	172
175°	634	632	631	634	631	60
180°	635	635	635	635	635	



TEST NUMBER: P332503-935

CATALOG NUMBER: S124DIP-S350D590U935-4F0-1E-UDD-D1

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°	12.4	16.3	20.2	24.2	28.1	32.1	36.2	40.4	44.6	48.7	51.5
90°	8.0	12.8	17.7	22.5	27.3	32.1	36.9	41.6	46.4	51.1	54.4
92.5°	16.7	21.4	26.0	30.7	35.2	39.8	44.3	48.8	53.3	57.9	60.8
95°	34.8	38.7	42.7	46.7	50.6	54.8	59.3	63.8	68.3	72.8	75.5
97.5°	56.3	59.7	63.0	66.4	69.7	73.7	78.3	82.8	87.4	92.0	94.7
100°	73.3	76.0	78.8	81.6	84.4	88.1	92.6	97.1	101.6	106.1	108.7
102.5°	91.3	93.5	95.7	98.0	100.2	103.6	107.9	112.3	116.6	121.0	123.6
105°	118.1	120.0	121.9	123.8	125.8	128.6	132.4	136.2	140.0	143.8	146.4
107.5°	147.0	148.6	150.2	151.8	153.4	155.8	159.1	162.3	165.6	168.8	171.3
110°	166.3	167.8	169.3	170.7	172.2	174.5	177.5	180.6	183.7	186.8	188.6



TEST NUMBER: P332503-935

CATALOG NUMBER: S124DIP-S350D590U935-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	186.4	187.5	188.7	189.9	191.1	193.0	195.9	198.7	201.6	204.4	206.4
115°	216.5	217.4	218.2	219.0	219.8	221.5	224.2	227.0	229.6	232.3	234.2
117.5°	245.4	245.9	246.5	247.1	247.6	249.2	251.8	254.3	256.8	259.4	260.9
120°	264.2	265.0	265.7	266.4	267.1	268.6	270.9	273.2	275.5	277.8	279.1
122.5°	284.3	284.6	284.7	285.0	285.2	286.5	288.9	291.2	293.5	295.8	297.2
125°	313.5	313.4	313.3	313.1	313.1	314.1	316.2	318.4	320.6	322.8	324.3
127.5°	340.2	340.4	340.7	340.9	341.1	342.1	343.6	345.2	346.7	348.3	349.7
130°	358.7	359.0	359.2	359.5	359.6	360.5	362.0	363.4	364.9	366.3	367.7
132.5°	378.0	378.2	378.2	378.4	378.6	379.2	380.2	381.3	382.4	383.5	384.8
135°	403.0	403.6	404.3	404.9	405.6	406.3	406.9	407.5	408.2	408.8	410.0
137.5°	430.7	430.9	431.1	431.4	431.5	431.9	432.4	432.9	433.3	433.9	434.9
140°	449.2	449.3	449.4	449.5	449.7	449.8	449.9	450.0	450.0	450.1	451.3
142.5°	465.7	465.9	466.1	466.3	466.5	466.6	466.4	466.3	466.1	466.0	467.0
145°	489.0	489.4	489.7	490.1	490.4	490.6	490.8	490.9	490.9	491.0	491.5
147.5°	512.2	512.6	513.1	513.5	513.9	514.1	514.0	513.9	513.8	513.8	513.8
150°	526.3	526.7	527.0	527.4	527.7	527.9	527.9	527.9	527.9	527.9	527.9
152.5°	539.4	539.6	539.8	540.1	540.4	540.5	540.6	540.7	540.8	540.9	541.1
155°	559.8	559.8	559.8	559.8	559.8	559.7	559.6	559.6	559.5	559.3	559.7
157.5°	577.1	576.9	576.7	576.5	576.4	576.2	576.2	576.2	576.2	576.1	576.4
160°	587.3	587.2	587.1	587.0	586.9	586.8	586.7	586.6	586.4	586.3	586.7
162.5°	596.8	596.5	596.2	595.9	595.6	595.4	595.3	595.2	595.1	595.0	595.6
165°	609.4	609.1	608.7	608.5	608.1	607.9	607.6	607.4	607.2	607.0	607.6
167.5°	619.1	618.7	618.2	617.8	617.3	617.1	617.1	617.2	617.2	617.2	617.9
170°	624.7	624.1	623.5	623.0	622.4	622.2	622.3	622.4	622.6	622.7	623.4
172.5°	628.5	628.1	627.7	627.2	626.7	626.5	626.5	626.5	626.5	626.6	627.3
175°	634.0	633.4	632.9	632.3	631.8	631.5	631.4	631.3	631.1	631.0	631.8
177.5°	635.8	635.3	634.9	634.5	634.0	633.8	633.8	633.8	633.8	633.8	634.4
180°	635.0	635.0	635.0	635.0	635.0	635.0	635.0	635.0	635.0	635.0	635.0



TEST NUMBER: P332503-935

CATALOG NUMBER: S124DIP-S350D590U935-4F0-1E-UDD-D1

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°	54.2	57.0	59.8	61.6	62.3	63.2	64.1	64.9
90°	57.7	61.0	64.3	66.4	67.3	68.3	69.2	70.2
92.5°	63.7	66.6	69.7	71.5	72.4	73.3	74.1	74.9
95°	78.4	81.1	83.9	85.7	86.4	87.3	88.1	88.9
97.5°	97.5	100.2	103.0	104.8	105.6	106.3	107.1	107.9
100°	111.4	114.1	116.8	118.4	119.1	119.7	120.3	121.0
102.5°	126.3	129.0	131.7	133.5	134.2	135.0	135.8	136.6
105°	149.0	151.5	154.1	155.9	157.0	158.1	159.1	160.1
107.5°	173.8	176.4	178.9	180.6	181.2	181.8	182.4	183.0
110°	190.5	192.3	194.2	195.7	196.7	197.8	198.8	199.9



TEST NUMBER: P332503-935

CATALOG NUMBER: S124DIP-S350D590U935-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	208.3	210.3	212.2	213.6	214.4	215.2	216.0	216.8
115°	236.1	237.9	239.8	241.0	241.5	242.0	242.6	243.1
117.5°	262.4	263.9	265.4	266.5	267.0	267.4	267.9	268.5
120°	280.3	281.6	282.8	284.0	284.9	285.9	286.8	287.7
122.5°	298.7	300.1	301.6	302.4	302.7	303.0	303.2	303.5
125°	325.7	327.3	328.7	329.7	330.0	330.4	330.6	331.0
127.5°	351.1	352.5	354.0	354.9	355.3	355.8	356.2	356.6
130°	369.1	370.6	372.0	372.7	372.8	372.9	373.1	373.2
132.5°	386.2	387.4	388.8	389.7	390.0	390.4	390.8	391.2
135°	411.3	412.5	413.7	414.5	414.7	414.9	415.1	415.3
137.5°	435.9	437.0	438.0	438.8	439.3	439.8	440.3	440.8
140°	452.3	453.3	454.4	455.1	455.5	455.8	456.2	456.5
142.5°	468.0	469.0	470.0	470.7	471.1	471.4	471.8	472.2
145°	492.0	492.4	492.8	493.0	493.1	493.1	493.2	493.2
147.5°	513.8	513.7	513.7	513.8	513.9	514.1	514.4	514.5
150°	527.9	527.9	527.9	527.9	527.7	527.6	527.5	527.4
152.5°	541.4	541.7	541.9	541.9	541.7	541.3	541.1	540.8
155°	560.2	560.6	561.1	561.1	560.6	560.2	559.7	559.3
157.5°	576.8	577.1	577.5	577.4	577.0	576.7	576.3	575.9
160°	587.0	587.3	587.6	587.5	587.0	586.4	585.9	585.4
162.5°	596.2	596.8	597.4	597.4	596.8	596.2	595.7	595.2
165°	608.3	608.9	609.6	609.7	609.2	608.8	608.4	608.0
167.5°	618.5	619.1	619.8	619.7	619.1	618.5	617.8	617.1
170°	624.0	624.7	625.3	625.3	624.5	623.7	622.9	622.2
172.5°	628.1	628.9	629.6	629.6	628.8	628.0	627.2	626.5
175°	632.6	633.4	634.0	634.0	633.4	632.6	631.8	631.0
177.5°	635.0	635.6	636.2	636.2	635.5	634.8	634.0	633.4
180°	635.0	635.0	635.0	635.0	635.0	635.0	635.0	635.0

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