

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: P332502-840

Luminaire Tested: **S124DIP-S350D590U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332502-840
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-S350D590U840-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3839.7 lumens
Efficiency: N/A
Efficacy: 150.0 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

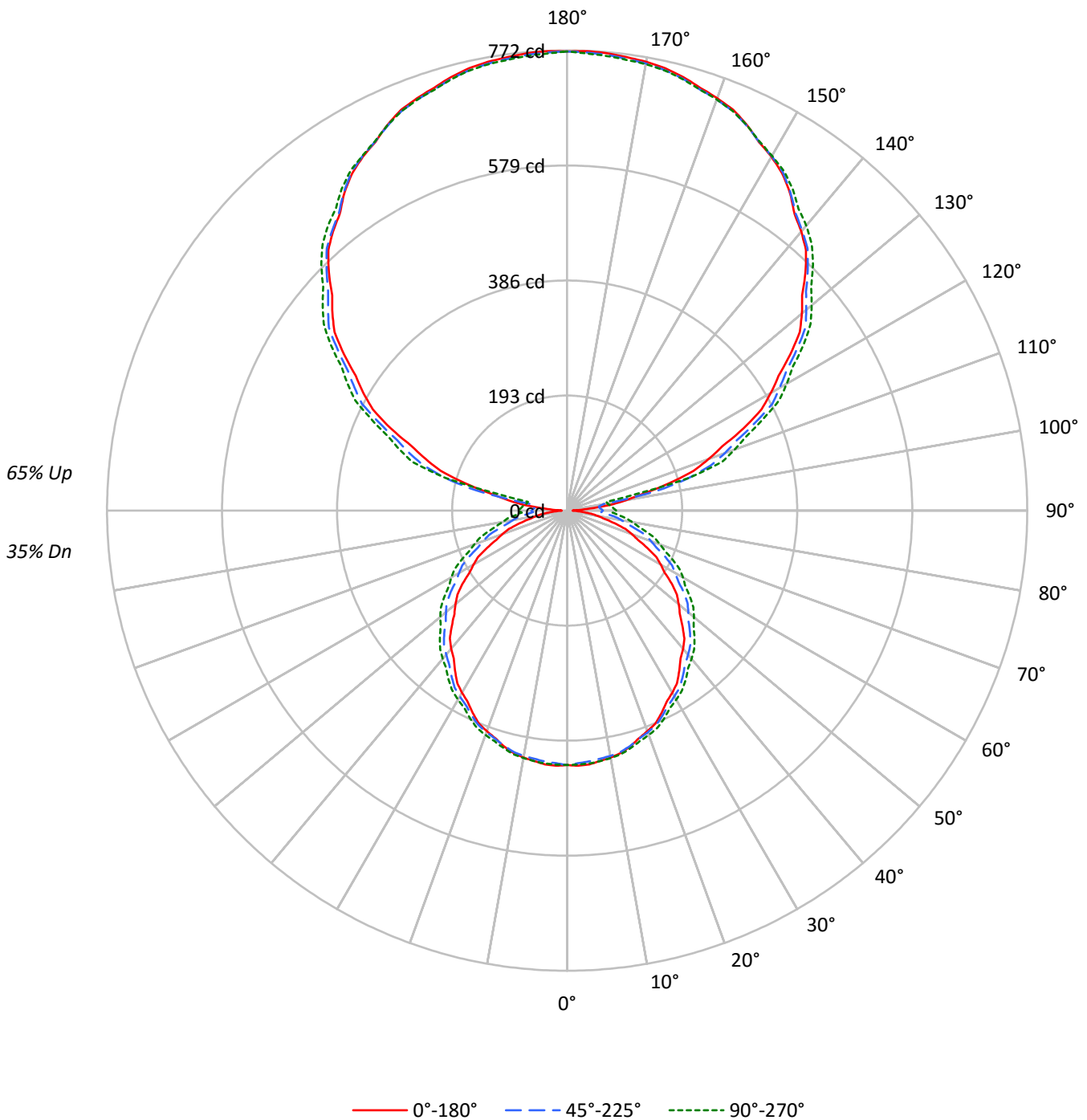
Input Watts (W): 25.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332502-840

CATALOG NUMBER: S124DIP-S350D590U840-4F0-1E-UDD-D

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	75	75	75	58	58	58	42	42	42	35
1	94	89	85	81	84	81	77	74	65	62	60	50	48	47	36	35	34	28
2	85	77	71	66	76	70	65	60	56	52	49	43	41	38	32	30	28	23
3	77	68	60	54	69	61	55	50	49	45	41	38	35	32	28	26	24	19
4	71	60	52	46	63	54	47	42	44	38	34	34	30	27	25	22	20	16
5	65	53	45	39	58	48	41	36	39	34	29	30	26	23	22	20	17	14
6	59	47	39	33	53	43	36	31	35	29	26	27	23	20	20	17	15	12
7	55	43	35	29	49	39	32	27	31	26	22	25	21	18	18	15	13	11
8	51	38	31	26	46	35	28	24	29	23	20	22	19	16	17	14	12	9
9	47	35	28	23	42	32	25	21	26	21	17	20	17	14	15	13	11	8
10	44	32	25	20	40	29	23	19	24	19	16	19	15	13	14	12	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3446	3446	3446
5°	3457	3367	3378
10°	3435	3313	3310
15°	3404	3249	3231
20°	3358	3179	3155
25°	3306	3100	3070
30°	3249	3021	2983
35°	3185	2941	2907
40°	3134	2865	2828
45°	3058	2793	2759
50°	2994	2713	2687
55°	2928	2636	2603
60°	2824	2538	2526
65°	2708	2435	2431
70°	2572	2315	2320
75°	2379	2183	2220
80°	2166	2057	2123
85°	1893	1946	2065



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.4	1.1
10°-20°	115.8	3.0
20°-30°	175.1	4.6
30°-40°	211.9	5.5
40°-50°	224.0	5.8
50°-60°	210.8	5.5
60°-70°	174.9	4.6
70°-80°	122.9	3.2
80°-90°	71.7	1.9
90°-100°	67.6	1.8
100°-110°	198.5	5.2
110°-120°	341.8	8.9
120°-130°	419.4	10.9
130°-140°	441.4	11.5
140°-150°	409.1	10.7
150°-160°	329.1	8.6
160°-170°	212.2	5.5
170°-180°	73.2	1.9
0°-30°	331.4	8.6
0°-40°	543.2	14.1
0°-60°	978.1	25.5
0°-90°	1347.5	35.1
90°-120°	607.8	15.8
90°-150°	1877.7	48.9
90°-180°	2492.0	64.9
0°-180°	3839.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	427	427	427	427	427	
5°	427	426	422	426	426	41
15°	410	410	409	413	412	115
25°	375	378	379	384	385	173
35°	328	334	338	345	347	205
45°	273	282	292	299	302	211
55°	214	224	238	248	251	191
65°	148	164	180	191	196	147
75°	82	100	120	133	138	87
85°	25	46	67	81	86	27
90°	9	35	60	77	82	7
95°	38	35	54	70	76	46
105°	178	191	211	226	212	186
115°	327	333	347	359	362	322
125°	457	459	470	480	484	408
135°	566	565	571	579	583	436
145°	652	653	653	656	659	407
155°	714	714	713	715	713	329
165°	753	750	750	754	749	213
175°	770	767	767	772	766	73
180°	770	770	770	770	770	



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CATALOG NUMBER: S124DIP-S350D590U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9
2.5°	428.4	428.1	427.9	427.6	427.4	426.9	426.3	425.6	424.9	424.1	424.7
5°	427.4	427.0	426.7	426.4	426.1	425.6	424.7	424.0	423.3	422.5	423.4
7.5°	423.7	423.5	423.3	423.1	422.9	422.5	421.9	421.3	420.7	420.1	421.0
10°	420.6	420.5	420.4	420.3	420.2	419.9	419.4	418.8	418.3	417.8	418.7
12.5°	416.5	416.4	416.4	416.4	416.4	416.2	415.8	415.5	415.1	414.8	415.6
15°	409.6	409.8	409.9	410.0	410.1	410.0	409.6	409.3	409.0	408.7	409.6
17.5°	400.4	400.7	401.0	401.3	401.6	401.8	401.7	401.6	401.6	401.5	402.5
20°	393.8	394.2	394.6	394.9	395.2	395.4	395.5	395.6	395.7	395.8	396.9
22.5°	386.6	387.0	387.4	387.8	388.2	388.5	388.7	388.9	389.1	389.3	390.3
25°	374.8	375.4	376.1	376.7	377.3	377.8	378.1	378.4	378.7	379.1	380.2
27.5°	361.5	362.5	363.5	364.4	365.3	366.0	366.5	367.0	367.5	368.0	369.0
30°	352.7	353.7	354.5	355.3	356.2	357.0	357.7	358.4	359.2	359.9	361.1
32.5°	343.3	344.3	345.3	346.3	347.3	348.2	349.0	349.8	350.7	351.5	352.8
35°	327.9	329.2	330.4	331.7	333.1	334.2	335.3	336.3	337.4	338.4	339.9
37.5°	312.6	314.0	315.5	316.9	318.4	319.7	321.1	322.4	323.8	325.1	326.6
40°	302.6	304.0	305.4	306.7	308.1	309.5	311.0	312.6	314.0	315.5	317.1
42.5°	291.1	292.7	294.2	295.8	297.3	298.9	300.7	302.5	304.2	305.9	307.7
45°	273.4	275.4	277.4	279.4	281.4	283.5	285.5	287.5	289.5	291.5	293.4
47.5°	256.5	258.6	260.6	262.8	264.8	267.0	269.3	271.8	274.1	276.4	278.2
50°	244.3	246.6	248.9	251.3	253.6	255.9	258.3	260.6	263.0	265.3	267.4
52.5°	232.1	234.4	236.7	239.0	241.4	243.9	246.5	249.2	251.9	254.6	256.7
55°	214.2	216.4	218.6	220.9	223.1	225.8	228.9	232.2	235.3	238.5	240.7
57.5°	194.2	196.9	199.7	202.5	205.2	208.1	211.4	214.5	217.6	220.9	223.4
60°	181.2	183.9	186.7	189.5	192.2	195.3	198.8	202.4	205.8	209.3	211.8
62.5°	168.5	171.6	174.6	177.6	180.6	183.9	187.3	190.9	194.4	197.9	200.4
65°	148.1	151.6	155.0	158.3	161.8	165.3	168.8	172.5	176.1	179.8	182.4
67.5°	128.6	132.2	135.8	139.5	143.0	146.7	150.7	154.5	158.3	162.2	164.9
70°	115.2	118.8	122.4	126.0	129.7	133.5	137.5	141.6	145.6	149.7	152.5
72.5°	102.2	105.9	109.6	113.3	116.9	121.0	125.2	129.6	133.8	138.1	140.9
75°	82.2	86.1	90.1	94.0	98.0	102.1	106.6	111.1	115.5	120.0	123.0
77.5°	63.6	67.8	71.9	76.0	80.2	84.6	89.3	94.0	98.7	103.3	106.3
80°	52.1	56.4	60.6	64.8	69.1	73.5	78.3	82.9	87.6	92.3	95.4
82.5°	40.6	45.0	49.5	53.9	58.3	62.8	67.6	72.2	76.9	81.6	84.8
85°	25.3	29.8	34.2	38.7	43.2	47.8	52.6	57.4	62.1	67.0	70.1
87.5°	14.5	19.1	23.7	28.4	32.9	37.7	42.5	47.4	52.3	57.2	60.4
90°	9.4	15.0	20.7	26.4	32.0	37.7	43.2	48.8	54.4	60.0	63.8
92.5°	14.5	18.4	22.3	26.3	30.1	34.8	40.5	46.0	51.6	57.3	61.0
95°	37.9	37.1	36.2	35.3	34.5	36.4	40.8	45.3	49.8	54.2	57.9
97.5°	72.9	78.7	84.4	90.1	95.8	93.7	83.7	73.8	63.8	53.8	56.7
100°	99.8	104.8	109.9	114.9	120.0	115.7	102.2	88.8	75.2	61.7	62.4
102.5°	130.2	134.2	138.4	142.5	146.6	149.6	151.3	153.0	154.8	156.5	135.8
105°	177.7	180.6	183.5	186.4	189.2	193.0	197.5	202.2	206.7	211.3	215.1
107.5°	222.7	224.8	226.9	229.0	231.2	234.5	239.1	243.7	248.2	252.9	256.0
110°	252.7	254.6	256.4	258.3	260.1	263.4	267.8	272.4	276.8	281.2	284.0



TEST NUMBER: P332502-840

CATALOG NUMBER: S124DIP-S350D590U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	281.8	283.8	285.8	287.8	289.8	292.8	296.7	300.6	304.5	308.4	310.7
115°	326.6	327.9	329.3	330.6	331.9	334.3	337.5	340.8	344.1	347.4	349.9
117.5°	367.4	368.5	369.6	370.7	371.7	374.1	377.5	380.9	384.4	387.8	390.0
120°	394.7	395.5	396.4	397.2	398.0	399.9	402.8	405.8	408.8	411.7	414.0
122.5°	420.5	420.8	421.2	421.6	422.0	423.7	426.8	429.9	432.9	436.1	438.4
125°	457.0	457.4	457.8	458.2	458.6	460.0	462.4	464.8	467.3	469.6	472.0
127.5°	491.9	491.9	492.0	492.0	492.0	493.3	495.9	498.6	501.2	503.8	505.6
130°	514.1	514.1	514.1	514.2	514.2	515.2	517.4	519.5	521.5	523.6	525.6
132.5°	534.8	535.0	535.1	535.2	535.3	536.3	538.2	540.1	541.9	543.7	545.6
135°	565.5	565.3	565.2	565.1	565.0	565.5	566.8	568.0	569.3	570.6	572.5
137.5°	593.0	593.0	592.9	592.9	592.8	593.2	594.2	595.1	596.0	596.9	598.7
140°	611.0	611.2	611.3	611.5	611.6	611.9	612.2	612.6	613.0	613.3	615.1
142.5°	626.7	627.2	627.6	628.0	628.5	628.7	628.8	628.9	629.0	629.1	630.7
145°	651.5	651.7	652.0	652.3	652.6	652.7	652.7	652.7	652.7	652.7	653.5
147.5°	671.2	671.8	672.4	673.0	673.6	673.8	673.7	673.6	673.4	673.3	673.5
150°	685.4	685.8	686.2	686.6	687.0	687.2	687.0	686.9	686.8	686.6	686.6
152.5°	697.0	697.4	697.8	698.1	698.5	698.6	698.4	698.2	697.9	697.7	697.9
155°	713.8	713.9	714.0	714.1	714.3	714.1	713.8	713.4	713.0	712.6	713.1
157.5°	727.9	727.8	727.7	727.7	727.6	727.3	726.9	726.5	726.0	725.6	726.3
160°	736.2	735.8	735.4	735.1	734.7	734.4	734.3	734.2	734.0	733.9	734.7
162.5°	743.6	743.1	742.6	742.1	741.6	741.3	741.1	741.0	740.9	740.8	741.5
165°	752.9	752.2	751.6	750.9	750.3	750.0	750.0	750.0	750.0	750.0	751.0
167.5°	760.2	759.6	758.9	758.3	757.6	757.2	757.2	757.1	757.0	756.9	758.1
170°	764.5	763.7	762.9	762.1	761.3	761.0	761.1	761.2	761.4	761.5	762.5
172.5°	767.2	766.4	765.7	764.9	764.2	763.8	764.0	764.1	764.2	764.3	765.4
175°	770.2	769.4	768.6	767.9	767.1	766.8	766.9	767.1	767.2	767.3	768.4
177.5°	771.5	770.8	770.1	769.4	768.7	768.4	768.6	768.8	769.0	769.2	770.1
180°	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2



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CATALOG NUMBER: S124DIP-S350D590U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9
2.5°	425.4	426.0	426.6	426.8	426.8	426.7	426.6	426.5
5°	424.2	425.1	426.0	426.4	426.3	426.1	426.0	425.9
7.5°	422.0	422.9	423.9	424.3	424.2	424.1	424.0	423.9
10°	419.7	420.6	421.6	422.0	421.9	421.8	421.7	421.6
12.5°	416.5	417.4	418.2	418.6	418.6	418.6	418.6	418.5
15°	410.6	411.5	412.5	412.9	412.8	412.7	412.6	412.5
17.5°	403.4	404.5	405.5	405.9	405.8	405.7	405.7	405.6
20°	397.9	399.0	400.0	400.6	400.6	400.6	400.6	400.6
22.5°	391.4	392.4	393.5	394.2	394.4	394.5	394.7	394.9
25°	381.4	382.5	383.7	384.4	384.5	384.6	384.7	384.8
27.5°	370.1	371.2	372.3	372.9	373.0	373.1	373.2	373.4
30°	362.2	363.5	364.6	365.3	365.5	365.8	366.0	366.2
32.5°	354.2	355.6	356.9	357.7	357.9	358.1	358.3	358.5
35°	341.4	342.8	344.4	345.3	345.6	345.9	346.3	346.6
37.5°	328.1	329.5	331.0	332.0	332.3	332.6	333.1	333.4
40°	318.7	320.2	321.8	322.9	323.3	323.8	324.2	324.6
42.5°	309.4	311.2	313.0	314.1	314.4	314.7	315.1	315.4
45°	295.2	297.0	298.8	299.9	300.5	301.0	301.5	302.1
47.5°	280.1	282.0	283.9	285.1	285.8	286.4	287.0	287.7
50°	269.5	271.7	273.8	275.2	275.8	276.4	277.1	277.7
52.5°	258.8	260.9	263.1	264.5	265.1	265.7	266.4	267.0
55°	242.8	244.9	247.0	248.4	249.0	249.6	250.3	251.0
57.5°	225.9	228.4	231.0	232.5	233.1	233.7	234.3	234.9
60°	214.3	216.7	219.1	220.8	221.7	222.5	223.4	224.2
62.5°	202.8	205.2	207.6	209.3	210.2	211.0	211.9	212.7
65°	185.0	187.7	190.4	192.1	193.0	193.8	194.7	195.5
67.5°	167.6	170.4	173.0	174.8	175.6	176.4	177.2	178.1
70°	155.3	158.2	161.1	162.9	163.6	164.4	165.1	165.8
72.5°	143.7	146.5	149.3	151.1	151.9	152.7	153.6	154.4
75°	125.9	128.9	131.9	133.8	134.8	135.7	136.7	137.6
77.5°	109.4	112.4	115.4	117.4	118.5	119.5	120.5	121.5
80°	98.7	101.8	105.0	107.0	107.9	108.8	109.6	110.4
82.5°	88.1	91.4	94.6	96.7	97.7	98.6	99.6	100.5
85°	73.3	76.4	79.7	81.8	82.8	83.9	84.9	86.0
87.5°	63.6	66.9	70.1	72.2	73.1	74.1	75.1	76.1
90°	67.7	71.5	75.4	77.9	79.0	80.1	81.2	82.3
92.5°	64.7	68.6	72.3	74.6	75.5	76.4	77.4	78.3
95°	61.5	65.1	68.8	71.2	72.2	73.3	74.4	75.5
97.5°	59.6	62.4	65.2	67.3	68.3	69.3	70.4	71.4
100°	63.0	63.7	64.4	65.2	66.0	67.0	67.9	68.7
102.5°	115.1	94.4	73.7	63.8	64.7	65.5	66.4	67.3
105°	218.9	222.7	226.5	226.5	222.8	219.0	215.3	211.5
107.5°	259.2	262.4	265.6	267.8	269.0	270.2	271.6	272.8
110°	286.7	289.4	292.1	294.1	295.3	296.5	297.7	299.0



TEST NUMBER: P332502-840

CATALOG NUMBER: S124DIP-S350D590U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	313.1	315.3	317.6	319.4	320.8	322.1	323.5	324.8
115°	352.5	355.2	357.7	359.4	360.1	360.9	361.6	362.3
117.5°	392.1	394.3	396.5	397.9	398.7	399.5	400.3	401.1
120°	416.5	418.9	421.2	422.7	423.3	423.9	424.4	425.1
122.5°	440.6	442.9	445.1	446.6	447.1	447.6	448.1	448.6
125°	474.4	476.9	479.2	480.8	481.6	482.3	483.1	483.8
127.5°	507.6	509.4	511.2	512.4	513.0	513.6	514.3	514.9
130°	527.7	529.7	531.8	533.1	533.7	534.3	535.0	535.6
132.5°	547.6	549.6	551.6	552.8	553.3	553.9	554.4	554.9
135°	574.5	576.4	578.3	579.8	580.7	581.6	582.5	583.4
137.5°	600.6	602.4	604.3	605.4	605.8	606.3	606.7	607.2
140°	616.8	618.6	620.4	621.6	622.3	622.9	623.6	624.2
142.5°	632.1	633.6	635.1	636.1	636.5	637.0	637.5	637.9
145°	654.2	655.0	655.7	656.4	657.1	657.8	658.5	659.1
147.5°	673.7	673.9	674.1	674.4	674.8	675.3	675.8	676.2
150°	686.6	686.6	686.6	686.7	686.8	687.0	687.1	687.2
152.5°	698.1	698.3	698.5	698.6	698.5	698.4	698.3	698.3
155°	713.6	714.1	714.6	714.7	714.3	713.9	713.6	713.2
157.5°	726.9	727.6	728.2	728.2	727.6	726.9	726.3	725.6
160°	735.4	736.2	737.0	737.0	736.2	735.4	734.7	733.9
162.5°	742.4	743.1	743.9	743.9	743.0	742.0	741.2	740.3
165°	752.0	753.1	754.2	754.1	752.9	751.7	750.6	749.4
167.5°	759.2	760.3	761.4	761.3	760.1	758.8	757.5	756.3
170°	763.6	764.6	765.7	765.5	764.3	763.0	761.6	760.4
172.5°	766.4	767.4	768.4	768.2	766.9	765.5	764.1	762.7
175°	769.6	770.7	771.9	771.7	770.2	768.6	767.1	765.6
177.5°	770.9	771.7	772.5	772.3	771.1	769.9	768.6	767.4
180°	770.2	770.2	770.2	770.2	770.2	770.2	770.2	770.2

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