

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: P332531-935

Luminaire Tested: **S124DIP-S350D1205U935-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332531-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S350D1205U935-4F0-1E-UDD-D4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1205 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4947.1 lumens  
Efficiency: N/A  
Efficacy: 117.2 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

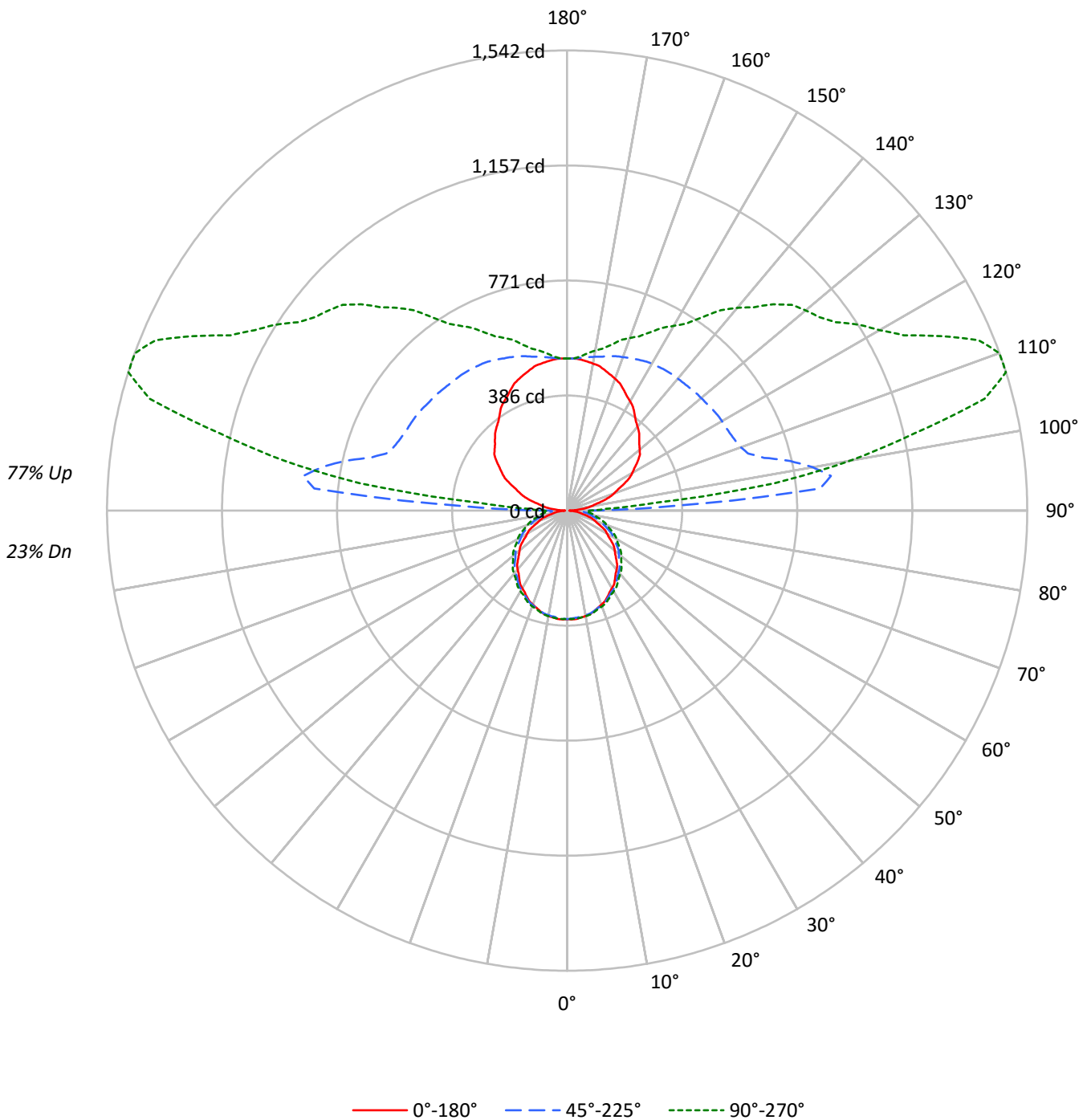
Input Watts (W): 42.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332531-935

CATALOG NUMBER: S124DIP-S350D1205U935-4F0-1E-UDD-D4

### Luminous Intensity Polar Plot





TEST NUMBER: P332531-935

CATALOG NUMBER: S124DIP-S350D1205U935-4F0-1E-UDD-D4

**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	101	101	101	101	90	90	90	90	68	68	68	49	49	49	32	32	32	23
1	91	87	83	80	81	77	74	71	59	57	55	42	41	40	27	26	26	19
2	83	76	70	64	73	67	62	58	51	48	45	37	35	33	24	22	21	15
3	75	66	59	53	67	59	53	48	45	41	38	32	30	27	21	19	18	13
4	69	58	51	45	61	52	45	40	40	35	32	29	26	23	18	17	15	11
5	63	52	44	38	56	46	39	34	35	31	27	26	22	20	16	15	13	9
6	58	46	38	33	51	41	34	30	32	27	23	23	20	17	15	13	11	8
7	53	41	34	28	47	37	30	26	29	24	20	21	18	15	13	12	10	7
8	49	37	30	25	44	33	27	22	26	21	18	19	16	13	12	10	9	6
9	46	34	27	22	40	30	24	20	24	19	16	17	14	12	11	9	8	6
10	43	31	24	19	38	28	22	18	22	17	14	16	13	11	10	9	7	5

**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: P332531-935

CATALOG NUMBER: S124DIP-S350D1205U935-4F0-1E-UDD-D4

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	34.5	0.7
10°-20°	98.7	2.0
20°-30°	149.3	3.0
30°-40°	180.7	3.7
40°-50°	191.0	3.9
50°-60°	179.7	3.6
60°-70°	149.1	3.0
70°-80°	104.7	2.1
80°-90°	62.0	1.3
90°-100°	403.0	8.1
100°-110°	791.6	16.0
110°-120°	703.1	14.2
120°-130°	586.6	11.9
130°-140°	485.2	9.8
140°-150°	368.3	7.4
150°-160°	258.3	5.2
160°-170°	151.9	3.1
170°-180°	49.4	1.0
0°-30°	282.5	5.7
0°-40°	463.2	9.4
0°-60°	833.9	16.9
0°-90°	1149.8	23.2
90°-120°	1897.7	38.4
90°-150°	3337.7	67.5
90°-180°	3797.0	76.8
0°-180°	4947.1	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	31	58	72	76	6
95°	38	123	851	450	294	41
105°	121	182	683	1450	1448	129
115°	208	265	604	1152	1383	207
125°	289	343	594	976	1100	257
135°	342	407	581	859	977	264
145°	394	450	574	719	791	247
155°	447	483	558	632	659	206
165°	487	502	535	567	575	138
175°	508	509	513	520	518	48
180°	509	509	509	509	509	



TEST NUMBER: P332531-935

CATALOG NUMBER: S124DIP-S350D1205U935-4F0-1E-UDD-D4

**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°	12.2	16.4	20.7	24.5	28.4	32.3	37.5	41.4	45.8	50.1	52.6
90°	7.5	13.2	19.8	24.4	29.0	32.8	42.7	46.6	52.4	58.4	60.0
92.5°	17.6	26.1	38.7	54.2	72.1	96.4	151.2	232.7	312.2	355.8	305.3
95°	38.3	44.3	57.3	73.3	100.3	145.7	236.4	404.2	647.0	850.8	876.3
97.5°	64.1	66.6	77.7	92.4	115.5	153.9	224.6	363.8	605.1	891.7	1088.6
100°	80.5	82.9	92.2	106.6	127.9	162.9	225.5	342.1	549.7	835.3	1093.9
102.5°	96.5	100.2	108.5	121.7	142.0	175.2	232.0	335.0	512.1	765.7	1032.2
105°	120.7	125.5	132.3	146.2	166.0	197.6	248.9	335.4	478.8	683.2	920.6
107.5°	148.3	151.7	158.3	172.5	191.2	222.1	269.3	348.2	471.0	636.0	830.2
110°	166.3	169.6	175.9	189.2	208.4	237.6	284.8	358.1	471.3	619.5	784.7



TEST NUMBER: P332531-935

CATALOG NUMBER: S124DIP-S350D1205U935-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	183.7	186.8	193.6	206.0	225.2	254.3	299.6	368.7	474.6	610.7	758.2
115°	208.5	212.3	220.2	231.0	250.8	279.7	322.6	385.6	481.5	604.4	732.5
117.5°	234.9	238.2	244.9	256.3	274.7	304.3	345.0	402.9	489.0	601.0	719.5
120°	252.2	254.4	261.7	273.0	290.2	319.7	360.3	415.0	494.6	599.3	712.2
122.5°	268.2	270.2	277.2	287.6	306.2	334.7	375.2	426.5	500.4	596.9	704.2
125°	288.8	292.7	298.6	309.5	328.4	357.5	395.8	444.1	509.4	593.7	691.5
127.5°	307.3	310.4	317.5	330.0	349.7	378.8	415.3	459.3	516.1	589.0	674.7
130°	317.4	321.3	329.2	344.1	363.0	392.7	428.2	468.6	521.2	586.6	664.3
132.5°	327.8	330.9	341.2	355.3	375.8	403.8	438.9	478.4	525.7	584.5	654.9
135°	342.0	345.9	356.0	373.0	394.0	420.3	454.0	490.6	532.3	580.9	640.4
137.5°	356.6	360.3	371.2	387.4	409.1	433.9	465.1	499.0	535.7	578.9	628.0
140°	367.0	369.9	380.8	397.7	418.6	442.6	472.8	504.9	539.0	577.1	621.3
142.5°	377.9	380.8	391.1	407.3	427.4	450.6	479.7	509.3	541.7	576.4	615.7
145°	393.6	396.5	406.4	420.3	439.3	461.2	487.2	514.3	543.3	574.3	606.8
147.5°	411.4	412.3	421.0	435.3	451.1	470.8	495.2	518.8	544.2	570.7	599.0
150°	422.6	423.5	431.4	443.3	458.2	477.3	499.2	521.2	544.2	568.3	593.3
152.5°	432.7	432.9	440.8	452.0	465.5	482.8	502.5	522.9	542.7	564.3	586.9
155°	447.2	448.2	454.2	464.3	475.3	490.3	507.2	524.3	540.3	558.3	577.3
157.5°	461.4	461.4	467.0	474.8	484.4	496.3	510.7	524.3	537.7	552.1	567.5
160°	470.2	470.2	474.2	481.2	489.2	500.2	512.2	524.3	535.3	547.3	560.3
162.5°	478.2	477.4	480.6	486.8	494.0	502.7	513.8	524.3	532.9	542.4	553.9
165°	487.2	487.2	489.2	494.2	499.2	505.2	514.3	522.3	528.2	535.3	543.3
167.5°	496.3	495.2	496.3	500.1	502.8	507.5	514.0	519.9	523.5	528.1	533.6
170°	500.2	499.2	500.2	503.3	505.2	508.2	513.2	518.2	520.2	523.2	527.3
172.5°	504.2	503.3	503.4	505.7	506.9	509.0	512.5	516.7	517.0	518.4	521.7
175°	508.2	507.2	507.2	508.2	509.3	509.3	511.3	514.3	513.2	513.2	515.2
177.5°	510.1	509.3	508.4	509.3	509.3	509.3	510.1	511.6	510.1	510.1	510.8
180°	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3



TEST NUMBER: P332531-935

CATALOG NUMBER: S124DIP-S350D1205U935-4F0-1E-UDD-D4

**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°	55.4	58.2	61.0	62.8	63.7	64.7	65.3	66.1
90°	63.6	67.2	70.9	72.5	74.3	76.0	75.7	76.5
92.5°	240.0	193.9	166.3	147.9	136.8	132.2	129.5	130.2
95°	781.7	629.0	497.5	402.0	353.9	323.6	306.4	294.2
97.5°	1133.0	1077.7	982.3	879.4	808.3	748.9	719.6	699.6
100°	1242.4	1264.9	1218.3	1145.8	1059.4	999.0	969.7	962.3
102.5°	1235.1	1336.7	1353.2	1324.0	1271.3	1227.8	1196.9	1191.2
105°	1151.9	1327.3	1428.7	1471.1	1473.9	1466.6	1453.3	1448.0
107.5°	1035.3	1221.8	1363.5	1454.1	1504.3	1527.7	1538.3	1541.6
110°	964.8	1140.1	1287.2	1398.6	1470.4	1513.1	1531.9	1541.6





TEST NUMBER: P332531-935

CATALOG NUMBER: S124DIP-S350D1205U935-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	912.7	1067.7	1206.8	1318.2	1399.6	1451.1	1477.0	1492.4
115°	859.5	984.6	1103.6	1201.0	1280.7	1341.4	1374.0	1382.6
117.5°	832.1	935.8	1029.8	1112.5	1180.6	1231.7	1264.9	1271.9
120°	819.1	914.0	995.8	1068.1	1125.8	1170.6	1197.3	1209.1
122.5°	807.9	899.5	974.1	1037.6	1086.5	1124.7	1147.5	1159.1
125°	789.2	877.0	947.7	1003.9	1044.5	1074.0	1093.6	1100.1
127.5°	766.5	850.5	920.9	974.3	1015.1	1041.6	1058.2	1064.8
130°	749.0	829.7	899.3	953.4	995.0	1020.5	1037.1	1043.6
132.5°	730.7	806.5	874.5	928.6	969.3	998.1	1013.8	1020.4
135°	704.9	771.4	833.9	884.8	925.4	954.0	970.5	977.1
137.5°	681.7	738.1	790.8	837.0	874.9	902.9	916.5	924.2
140°	668.5	716.7	762.9	805.7	841.2	863.7	878.1	886.6
142.5°	656.3	698.8	738.5	775.6	806.9	827.8	840.5	846.5
145°	639.4	674.0	704.5	733.0	758.4	775.8	786.1	791.4
147.5°	625.4	652.6	676.6	698.8	717.5	732.4	740.3	742.4
150°	617.3	640.3	660.3	678.3	694.3	707.3	713.3	714.4
152.5°	608.5	628.3	646.7	661.5	675.1	685.7	689.3	690.3
155°	595.3	611.3	626.3	638.3	648.3	656.3	659.4	659.4
157.5°	581.1	594.5	607.1	616.7	624.3	630.3	632.1	632.1
160°	572.3	583.2	594.3	602.3	608.3	614.3	615.3	615.3
162.5°	563.4	572.9	581.5	588.7	593.1	599.1	600.1	599.3
165°	551.3	557.2	564.3	569.3	573.3	577.3	576.3	575.3
167.5°	539.5	544.1	549.7	552.7	554.7	557.2	557.1	556.3
170°	532.3	535.3	539.2	542.3	544.2	545.3	544.2	544.2
172.5°	525.8	528.1	530.5	532.6	533.8	534.9	533.8	532.3
175°	517.3	518.2	520.2	520.2	520.2	522.3	520.2	518.2
177.5°	511.6	512.5	512.5	513.2	512.5	513.2	511.6	510.1
180°	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3

(END OF REPORT)