

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: P332504-830

Luminaire Tested: **SA4XXDIP-C350D590U830-4F0-1E-UDD-D4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332504-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA4XXDIP-C350D590U830-4F0-1E-UDD-D4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

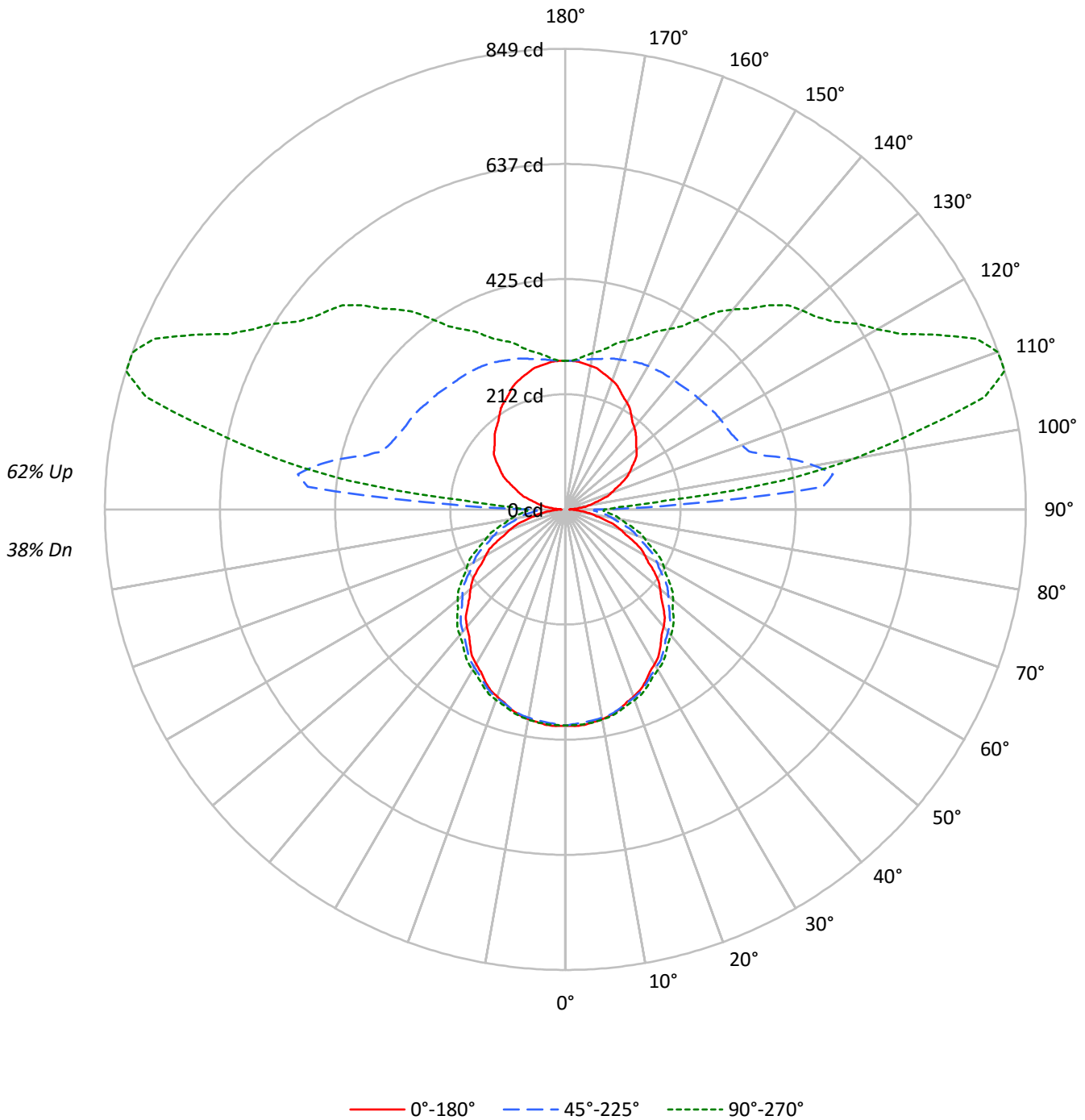
Lumens per Lamp: N/A
Luminaire Lumens: 3350.0 lumens
Efficiency: N/A
Efficacy: 130.9 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

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: P332504-830
CATALOG NUMBER: SA4XXDIP-C350D590U830-4F0-1E-UDD-D4

Luminous Intensity Polar Plot





TEST NUMBER: P332504-830

CATALOG NUMBER: SA4XXDIP-C350D590U830-4F0-1E-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	104	104	104	104	94	94	94	94	76	76	76	60	60	60	45	45	45	38
1	94	90	86	82	85	81	78	75	66	63	61	51	50	48	38	37	36	30
2	85	78	71	66	77	71	65	61	57	53	50	45	42	40	33	31	30	25
3	78	68	61	55	70	62	55	50	50	45	42	39	36	33	29	27	25	20
4	71	60	52	46	64	55	48	42	44	39	35	35	31	28	26	23	21	17
5	65	53	45	39	59	48	41	36	39	34	30	31	27	24	23	21	18	15
6	60	48	39	34	54	43	36	31	35	30	26	28	24	21	21	18	16	13
7	55	43	35	29	50	39	32	27	32	27	23	25	21	18	19	16	14	11
8	51	39	31	26	46	35	29	24	29	24	20	23	19	16	17	15	13	10
9	47	35	28	23	43	32	26	21	27	21	18	21	17	15	16	13	11	9
10	44	32	25	20	40	30	23	19	24	19	16	19	16	13	15	12	10	8

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: P332504-830

CATALOG NUMBER: SA4XXDIP-C350D590U830-4F0-1E-UDD-D4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.7	1.1
10°-20°	108.1	3.2
20°-30°	163.4	4.9
30°-40°	197.8	5.9
40°-50°	209.1	6.2
50°-60°	196.8	5.9
60°-70°	163.2	4.9
70°-80°	114.7	3.4
80°-90°	66.3	2.0
90°-100°	236.2	7.0
100°-110°	439.9	13.1
110°-120°	387.6	11.6
120°-130°	320.8	9.6
130°-140°	263.1	7.9
140°-150°	198.4	5.9
150°-160°	138.8	4.1
160°-170°	81.6	2.4
170°-180°	26.6	0.8
0°-30°	309.3	9.2
0°-40°	507.0	15.1
0°-60°	912.9	27.2
0°-90°	1257.1	37.5
90°-120°	1063.7	31.8
90°-150°	1845.9	55.1
90°-180°	2093.0	62.5
0°-180°	3350.0	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°	8	29	54	67	72	6
95°	24	77	477	267	186	24
105°	67	104	382	800	801	72
115°	114	146	336	635	760	113
125°	156	185	326	535	603	139
135°	184	219	314	467	532	143
145°	212	242	309	388	428	133
155°	240	259	300	340	354	111
165°	262	270	288	305	309	74
175°	273	274	276	280	278	26
180°	274	274	274	274	274	



TEST NUMBER: P332504-830

CATALOG NUMBER: SA4XXDIP-C350D590U830-4F0-1E-UDD-D4

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°	13.3	17.5	22.0	26.1	30.3	34.4	39.4	43.7	48.4	52.9	55.6
90°	7.6	12.7	18.3	22.8	27.3	31.4	38.9	43.2	48.5	53.8	56.2
92.5°	12.9	19.3	27.9	38.0	49.5	64.6	96.1	142.1	187.0	212.5	186.9
95°	23.6	28.5	37.0	47.3	63.5	89.7	140.6	232.8	365.4	477.0	492.1
97.5°	37.1	39.9	47.3	56.6	70.5	92.8	132.9	209.7	341.5	497.6	604.7
100°	45.8	48.4	54.7	63.7	76.5	96.9	132.5	197.2	310.7	466.2	606.5
102.5°	54.4	57.5	63.1	71.4	83.4	102.8	135.3	192.6	289.6	427.8	572.4
105°	66.9	70.5	75.2	83.6	95.3	113.7	143.2	191.4	270.4	382.2	511.0
107.5°	81.7	84.4	88.7	97.2	108.1	126.0	153.2	197.3	265.0	355.5	461.1
110°	91.2	93.7	97.7	105.6	116.7	133.6	160.7	201.8	264.5	345.9	435.8



TEST NUMBER: P332504-830

CATALOG NUMBER: SA4XXDIP-C350D590U830-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	100.3	102.6	107.0	114.2	125.2	141.9	168.1	206.8	265.4	340.3	420.6
115°	113.5	115.9	120.6	126.9	138.0	154.5	179.2	214.6	267.8	335.5	405.4
117.5°	127.5	129.6	133.5	139.9	150.1	166.8	190.2	222.8	270.6	332.2	397.1
120°	136.7	138.0	142.0	148.3	157.7	174.4	197.7	228.5	272.8	330.5	392.2
122.5°	145.2	146.4	150.2	155.7	165.8	181.8	205.0	233.9	275.0	328.3	386.9
125°	156.1	158.2	161.3	167.1	177.2	193.4	215.3	242.5	278.8	325.5	378.9
127.5°	166.0	167.6	171.4	178.0	188.6	204.7	225.3	249.9	281.3	321.6	368.5
130°	171.3	173.3	177.5	185.5	195.6	211.9	231.8	254.3	283.3	319.3	362.0
132.5°	176.8	178.4	184.0	191.5	202.5	217.8	237.3	259.1	285.2	317.4	356.2
135°	184.3	186.4	191.8	201.0	212.2	226.5	245.0	265.0	287.8	314.2	347.0
137.5°	192.1	194.1	199.8	208.5	220.1	233.6	250.4	268.8	288.7	312.1	339.2
140°	197.7	199.2	205.0	214.1	225.3	238.2	254.4	271.6	290.0	310.6	335.0
142.5°	203.3	204.9	210.4	219.0	230.0	242.3	258.0	273.9	291.2	309.9	331.6
145°	211.8	213.3	218.6	225.9	236.1	247.9	261.8	276.4	292.0	308.6	326.4
147.5°	221.3	221.8	226.4	234.0	242.4	253.1	266.2	278.8	292.5	306.7	322.0
150°	227.3	227.8	232.0	238.4	246.3	256.5	268.3	280.1	292.5	305.4	318.9
152.5°	232.6	232.6	237.0	243.0	250.2	259.5	270.0	281.0	291.6	303.2	315.4
155°	240.3	240.9	244.1	249.5	255.4	263.4	272.6	281.7	290.3	300.0	310.2
157.5°	248.0	248.0	251.0	255.1	260.3	266.6	274.5	281.7	289.0	296.7	305.0
160°	252.7	252.7	254.9	258.6	262.9	268.8	275.3	281.7	287.7	294.1	301.1
162.5°	257.0	256.6	258.3	261.6	265.5	270.1	276.2	281.7	286.3	291.5	297.7
165°	261.8	261.8	262.9	265.6	268.3	271.5	276.4	280.7	283.9	287.7	292.0
167.5°	266.6	266.2	266.6	268.7	270.2	272.7	276.3	279.4	281.3	283.8	286.8
170°	268.8	268.3	268.8	270.4	271.5	273.1	275.8	278.5	279.6	281.2	283.3
172.5°	271.0	270.4	270.5	271.7	272.4	273.5	275.4	277.7	277.9	278.6	280.3
175°	273.1	272.6	272.6	273.1	273.7	273.7	274.8	276.4	275.8	275.8	276.9
177.5°	274.1	273.7	273.2	273.7	273.7	273.7	274.1	274.9	274.1	274.1	274.6
180°	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7



TEST NUMBER: P332504-830

CATALOG NUMBER: SA4XXDIP-C350D590U830-4F0-1E-UDD-D4

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°	58.6	61.6	64.6	66.4	67.5	68.4	69.2	70.0
90°	59.6	63.0	66.4	68.2	69.6	70.9	71.2	72.0
92.5°	153.3	129.9	116.4	107.4	101.9	99.8	98.8	99.5
95°	442.6	361.9	292.6	242.1	216.7	201.0	192.2	186.1
97.5°	629.9	601.5	551.5	497.1	459.4	427.8	412.6	402.3
100°	687.7	701.2	677.5	639.3	593.2	561.2	545.7	542.2
102.5°	682.8	738.7	748.9	734.1	706.1	683.1	666.8	664.2
105°	636.6	732.1	787.8	811.4	813.3	809.8	803.1	800.7
107.5°	572.5	674.0	751.4	801.0	828.2	841.2	847.3	849.4
110°	533.8	629.1	709.4	770.1	809.0	832.4	842.8	848.5



TEST NUMBER: P332504-830

CATALOG NUMBER: SA4XXDIP-C350D590U830-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	504.7	589.2	665.1	725.8	769.9	798.0	812.3	821.0
115°	474.9	543.1	608.2	661.3	704.5	737.4	755.3	760.3
117.5°	458.5	515.4	566.9	612.1	649.1	677.0	695.2	699.4
120°	450.6	502.6	547.6	587.1	618.6	643.0	657.8	664.5
122.5°	443.7	493.9	535.1	569.9	596.4	617.4	630.0	636.6
125°	432.4	480.5	519.5	550.4	572.4	588.6	599.5	603.2
127.5°	418.8	464.8	503.5	532.8	555.2	569.7	578.9	582.9
130°	408.4	452.7	491.0	520.7	543.4	557.3	566.6	570.4
132.5°	397.8	439.4	476.8	506.4	528.7	544.4	553.2	556.9
135°	382.5	419.1	453.4	481.4	503.5	519.2	528.3	532.2
137.5°	368.8	399.9	429.0	454.2	474.9	490.2	497.8	502.2
140°	361.0	387.6	413.0	436.6	455.8	468.2	476.2	481.0
142.5°	353.9	377.4	399.3	419.6	436.7	448.1	455.2	458.5
145°	344.2	363.1	379.8	395.4	409.3	418.8	424.5	427.6
147.5°	336.2	350.8	363.8	375.8	386.1	394.2	398.6	399.9
150°	331.8	344.1	354.9	364.6	373.2	380.1	383.3	383.9
152.5°	327.0	337.6	347.5	355.5	362.8	368.5	370.4	371.0
155°	319.9	328.5	336.6	343.0	348.5	352.7	354.3	354.3
157.5°	312.3	319.5	326.2	331.4	335.5	338.7	339.7	339.7
160°	307.6	313.5	319.3	323.7	326.9	330.2	330.6	330.6
162.5°	302.8	307.8	312.5	316.4	318.8	322.0	322.5	322.1
165°	296.2	299.4	303.2	305.9	308.1	310.2	309.7	309.2
167.5°	289.9	292.4	295.4	297.0	298.1	299.4	299.4	299.0
170°	286.1	287.7	289.8	291.4	292.5	293.0	292.5	292.5
172.5°	282.6	283.8	285.1	286.3	286.9	287.5	286.9	286.1
175°	278.0	278.5	279.6	279.6	279.6	280.7	279.6	278.5
177.5°	274.9	275.4	275.4	275.8	275.4	275.8	274.9	274.1
180°	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7

(END OF REPORT)