

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: P331648-830

Luminaire Tested: **SA2XXRDIP-C485D330U830-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331648-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDIP-C485D330U830-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 485 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 330 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2835.1 lumens
Efficiency: N/A
Efficacy: 103.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

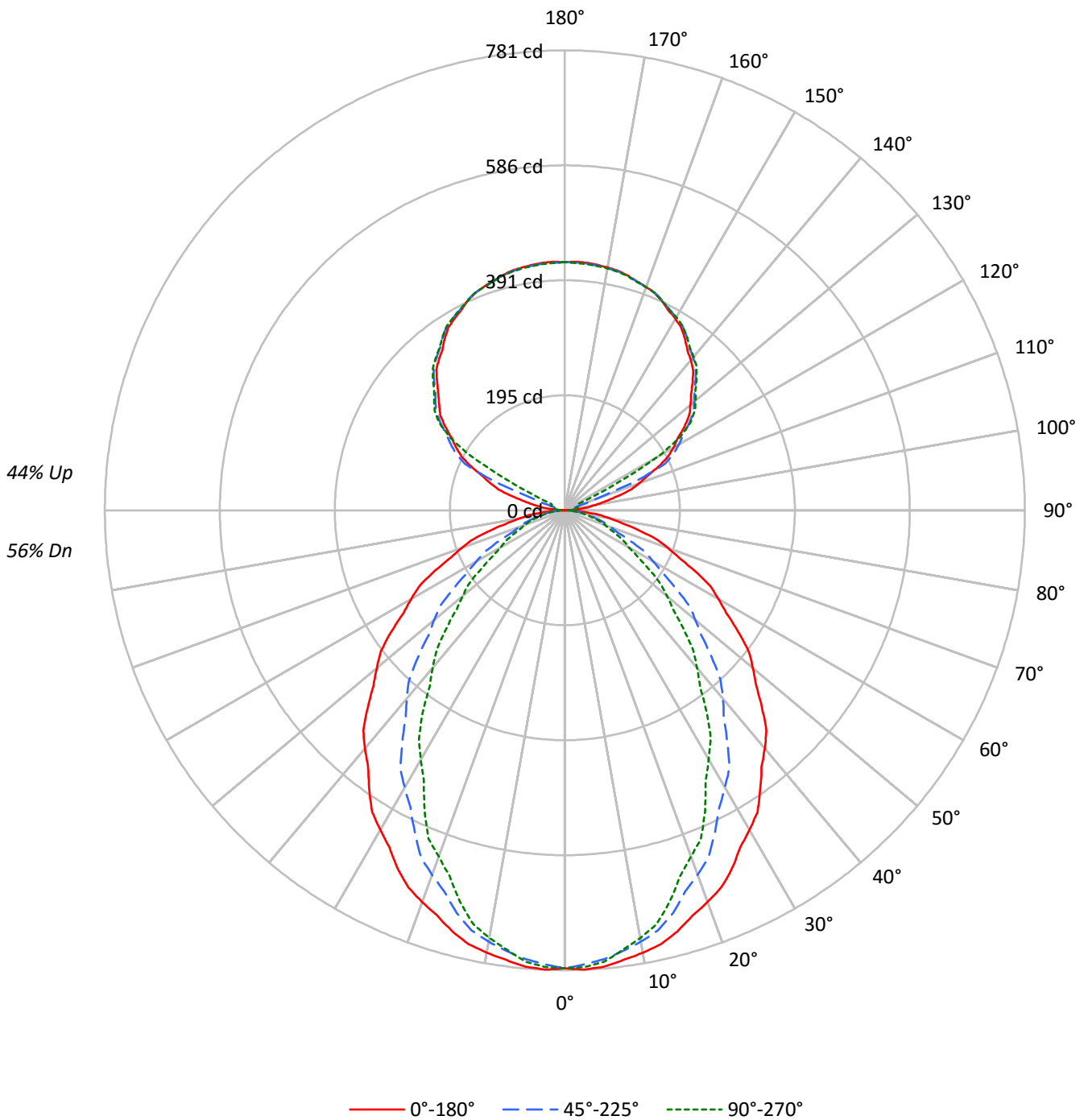
Input Watts (W): 27.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P331648-830

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Luminous Intensity Polar Plot





TEST NUMBER: P331648-830

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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									20									20					
RC	80									50									30									10									0									0					
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																		
RCR	0	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	56	56	56	49	49	49	42	42	42	36	36	36	31	31	31	28	28	28	24	24	24	22	22	22	20	20	20	18	18	18	16	16	16
	1	100	96	92	89	93	89	86	83	77	75	73	66	64	63	56	55	53	49	49	49	42	42	42	36	36	36	31	31	31	28	28	28	24	24	24	22	22	22	20	20	20	18	18	18	16	16	16			
	2	91	84	78	73	85	79	73	69	68	64	61	59	56	53	50	48	46	42	42	42	36	36	36	31	31	31	28	28	28	24	24	24	22	22	22	20	20	20	18	18	18	16	16	16						
	3	84	74	67	62	78	70	63	58	61	56	52	52	49	46	45	42	40	36	36	36	31	31	31	28	28	28	24	24	24	22	22	22	20	20	20	18	18	18	16	16	16	16	16	16						
	4	77	66	59	53	71	62	55	50	54	49	45	47	43	40	40	37	35	31	31	31	28	28	28	24	24	24	22	22	22	20	20	20	18	18	18	16	16	16	16	16	16	16	16							
	5	71	59	51	46	66	56	49	43	49	43	39	42	38	35	36	33	31	28	28	28	24	24	24	22	22	22	20	20	20	18	18	18	16	16	16	16	16	16	16	16	16	16	16							
	6	65	54	46	40	61	50	43	38	44	39	34	39	34	31	33	30	27	24	24	24	22	22	22	20	20	20	18	18	18	16	16	16	16	16	16	16	16	16	16	16	16	16	16							
	7	61	49	41	35	56	46	39	34	40	35	30	35	31	27	31	27	24	22	22	22	20	20	20	18	18	18	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16						
	8	56	44	37	31	52	42	35	30	37	31	27	32	28	25	28	25	22	20	20	20	18	18	18	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16						
	9	53	41	33	28	49	38	32	27	34	28	25	30	25	22	26	23	20	18	18	18	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16						
	10	49	37	30	25	46	35	29	24	31	26	22	28	23	20	24	21	18	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16						

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12558	12558	12558
5°	12606	12402	12470
10°	12511	12198	12095
15°	12366	11836	11497
20°	12167	11320	10753
25°	11965	10735	10033
30°	11680	10133	9107
35°	11404	9477	8296
40°	11126	8800	7358
45°	10803	8035	6510
50°	10467	7267	5674
55°	10125	6441	4873
60°	9726	5570	4046
65°	9280	4676	3683
70°	8738	3852	3389
75°	8079	3512	3163
80°	7132	3133	2882
85°	5613	2482	2482



TEST NUMBER: P331648-830

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	72.8	2.6
10°-20°	199.9	7.1
20°-30°	280.7	9.9
30°-40°	306.1	10.8
40°-50°	281.5	9.9
50°-60°	221.1	7.8
60°-70°	144.1	5.1
70°-80°	74.3	2.6
80°-90°	20.3	0.7
90°-100°	14.0	0.5
100°-110°	51.5	1.8
110°-120°	137.7	4.9
120°-130°	227.3	8.0
130°-140°	241.8	8.5
140°-150°	224.7	7.9
150°-160°	180.7	6.4
160°-170°	116.4	4.1
170°-180°	40.1	1.4
0°-30°	553.4	19.5
0°-40°	859.6	30.3
0°-60°	1362.1	48.0
0°-90°	1600.9	56.5
90°-120°	203.3	7.2
90°-150°	897.1	31.6
90°-180°	1234.0	43.5
0°-180°	2835.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	778	778	778	778	778	
5°	778	774	765	771	769	74
15°	740	731	708	695	688	208
25°	672	648	603	575	563	309
35°	579	541	481	438	421	362
45°	473	424	352	304	285	365
55°	360	304	229	188	173	321
65°	243	186	122	100	96	241
75°	130	82	56	52	51	137
85°	30	16	13	13	13	36
90°	0	4	6	8	8	2
95°	20	10	12	13	13	24
105°	93	97	19	22	23	99
115°	175	181	188	54	25	172
125°	248	252	258	260	260	221
135°	307	311	314	317	317	237
145°	356	356	360	362	361	222
155°	392	389	392	394	392	180
165°	413	411	412	414	412	117
175°	422	420	421	422	420	40
180°	421	421	421	421	421	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	777.8	777.8	777.8	777.8	777.8	777.8	777.8	777.8	777.8	777.8	777.8
2.5°	780.6	780.0	779.4	778.7	778.2	777.1	775.8	774.4	773.0	771.7	772.9
5°	777.8	777.0	776.3	775.5	774.7	773.3	771.3	769.2	767.2	765.2	766.6
7.5°	769.8	768.8	767.9	766.9	765.9	764.2	761.9	759.5	757.1	754.8	755.2
10°	763.1	762.0	760.8	759.8	758.7	756.6	753.5	750.3	747.2	744.0	743.6
12.5°	754.6	753.3	751.9	750.5	749.2	746.6	742.5	738.6	734.5	730.6	729.7
15°	739.8	738.1	736.4	734.6	732.9	729.4	724.1	718.8	713.5	708.1	705.2
17.5°	721.7	719.1	716.4	713.8	711.1	706.4	699.6	692.8	686.0	679.1	675.6
20°	708.1	705.0	701.9	698.8	695.6	690.1	682.3	674.5	666.7	658.8	655.0
22.5°	693.5	690.0	686.5	683.0	679.5	673.4	664.5	655.6	646.9	638.0	633.0
25°	671.6	666.6	661.6	656.5	651.5	643.9	633.5	623.2	612.8	602.6	596.2
27.5°	645.1	639.6	634.1	628.8	623.3	614.7	603.1	591.4	579.9	568.2	560.7
30°	626.5	620.6	614.6	608.7	602.8	593.5	581.0	568.4	555.9	543.5	535.5
32.5°	608.5	601.5	594.6	587.7	580.7	570.8	558.1	545.3	532.5	519.8	510.7
35°	578.6	570.6	562.7	554.7	546.7	535.8	522.1	508.3	494.6	480.8	470.9
37.5°	548.7	540.0	531.2	522.5	513.8	502.0	487.4	472.7	458.0	443.4	432.4
40°	527.9	518.6	509.2	499.8	490.4	478.2	463.0	447.8	432.6	417.5	406.3
42.5°	506.5	496.6	486.7	476.9	467.0	454.2	438.6	422.8	407.2	391.5	380.0
45°	473.1	462.6	452.0	441.6	431.1	417.6	401.2	384.8	368.3	351.9	340.8
47.5°	440.4	429.2	418.2	407.1	396.0	381.9	365.0	348.0	331.0	314.1	303.0
50°	416.7	405.6	394.5	383.4	372.3	358.2	340.9	323.8	306.5	289.3	278.5
52.5°	393.6	382.0	370.4	358.8	347.2	333.0	316.1	299.4	282.5	265.7	255.2
55°	359.7	347.5	335.3	323.1	310.9	296.3	279.5	262.6	245.6	228.8	219.4
57.5°	324.9	312.5	299.9	287.4	274.8	260.5	244.3	228.0	211.8	195.6	186.9
60°	301.2	288.8	276.3	263.7	251.2	237.0	220.8	204.7	188.6	172.5	164.5
62.5°	278.1	265.7	253.2	240.6	228.1	214.2	198.9	183.5	168.1	152.8	145.2
65°	242.9	230.2	217.5	204.8	192.2	178.8	164.8	150.6	136.6	122.4	117.2
67.5°	208.8	196.2	183.6	171.1	158.4	145.8	133.2	120.6	107.8	95.2	92.7
70°	185.1	173.0	160.7	148.5	136.3	124.8	114.0	103.2	92.5	81.6	80.1
72.5°	162.6	150.9	139.2	127.5	115.8	105.7	97.0	88.3	79.6	71.0	69.7
75°	129.5	118.6	107.6	96.7	85.7	77.6	72.3	66.9	61.6	56.3	55.2
77.5°	97.0	87.4	77.8	68.1	58.6	52.5	50.0	47.4	44.8	42.2	41.6
80°	76.7	68.7	60.8	52.8	44.8	40.1	38.5	36.9	35.3	33.7	33.2
82.5°	58.2	51.9	45.7	39.5	33.3	29.6	28.6	27.4	26.4	25.4	25.0
85°	30.3	27.0	23.7	20.5	17.2	15.3	14.8	14.3	13.9	13.4	13.4
87.5°	9.0	8.2	7.4	6.5	5.7	5.3	5.4	5.5	5.7	5.7	5.7
90°	0.3	1.0	1.8	2.5	3.3	4.0	4.4	5.0	5.6	6.1	6.4
92.5°	6.1	6.1	6.0	5.9	5.8	6.0	6.2	6.5	6.8	7.1	7.3
95°	19.8	17.5	15.4	13.1	10.8	10.0	10.5	10.9	11.4	11.9	12.3
97.5°	39.3	33.0	26.7	20.5	14.1	11.5	12.6	13.7	14.8	15.9	16.2
100°	53.9	44.7	35.3	26.1	16.9	12.7	13.9	15.1	16.2	17.3	17.9
102.5°	70.0	68.1	66.1	64.2	62.2	56.4	46.8	37.1	27.5	17.8	18.6
105°	92.7	94.6	96.7	98.8	100.8	92.6	74.1	55.6	37.0	18.6	19.3
107.5°	118.4	120.1	121.7	123.4	125.0	114.7	92.6	70.4	48.2	26.0	25.3
110°	135.0	136.4	137.9	139.3	140.7	131.6	112.1	92.5	72.9	53.3	46.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	150.6	151.8	153.2	154.4	155.6	153.8	149.0	144.2	139.3	134.5	109.8
115°	175.2	176.3	177.6	178.7	179.8	181.3	182.9	184.6	186.3	188.0	156.7
117.5°	197.3	198.5	199.8	201.1	202.4	203.6	204.8	205.9	207.1	208.3	200.7
120°	213.3	214.3	215.4	216.4	217.4	218.5	219.7	220.9	222.2	223.4	224.2
122.5°	227.0	228.1	229.1	230.2	231.3	232.4	233.8	235.1	236.5	237.8	238.3
125°	247.8	248.6	249.5	250.4	251.3	252.4	253.6	255.0	256.2	257.5	258.0
127.5°	266.6	267.6	268.5	269.6	270.5	271.5	272.4	273.4	274.4	275.3	276.0
130°	278.5	279.7	280.7	281.8	282.9	283.8	284.6	285.3	286.1	286.8	287.5
132.5°	290.8	291.6	292.6	293.5	294.5	295.2	296.0	296.7	297.5	298.2	298.9
135°	306.6	307.6	308.8	309.8	310.9	311.8	312.4	313.0	313.6	314.2	314.9
137.5°	322.6	323.4	324.1	324.9	325.6	326.4	327.1	327.7	328.5	329.1	329.8
140°	333.1	333.7	334.1	334.7	335.3	335.9	336.7	337.4	338.2	338.8	339.5
142.5°	341.9	342.3	342.8	343.4	343.8	344.5	345.3	346.2	347.0	347.9	348.5
145°	355.6	355.6	355.5	355.4	355.3	355.9	357.0	358.3	359.4	360.5	361.0
147.5°	367.7	367.4	367.1	366.8	366.6	367.0	368.2	369.4	370.5	371.6	371.9
150°	375.4	374.9	374.5	374.0	373.5	373.9	374.9	376.1	377.1	378.2	378.6
152.5°	382.0	381.5	381.0	380.4	379.9	380.1	381.2	382.2	383.2	384.3	384.7
155°	391.6	391.0	390.4	389.7	389.2	389.3	390.1	390.9	391.7	392.5	392.9
157.5°	399.1	398.6	398.0	397.6	397.0	397.1	397.7	398.2	398.8	399.4	399.8
160°	403.5	403.1	402.7	402.3	401.9	401.9	402.3	402.7	403.1	403.5	403.9
162.5°	407.4	407.0	406.6	406.1	405.8	405.8	406.0	406.4	406.8	407.2	407.6
165°	412.6	412.3	411.8	411.4	411.0	410.9	411.1	411.3	411.5	411.7	412.2
167.5°	416.5	416.1	415.8	415.3	414.9	414.8	415.0	415.2	415.4	415.6	416.0
170°	418.8	418.3	417.9	417.5	417.1	417.0	417.1	417.3	417.4	417.5	418.0
172.5°	420.2	419.8	419.3	419.0	418.6	418.4	418.6	418.7	418.9	419.0	419.4
175°	422.1	421.6	421.1	420.7	420.2	420.0	420.2	420.3	420.5	420.6	421.0
177.5°	422.4	422.0	421.6	421.2	420.8	420.8	420.8	420.8	420.8	420.9	421.3
180°	421.1	421.1	421.1	421.1	421.1	421.1	421.1	421.1	421.1	421.1	421.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	777.8	777.8	777.8	777.8	777.8	777.8	777.8	777.8
2.5°	774.1	775.4	776.7	777.1	776.9	776.7	776.4	776.2
5°	768.0	769.4	770.8	771.3	770.8	770.3	769.9	769.4
7.5°	755.5	755.9	756.4	756.2	755.4	754.5	753.8	752.9
10°	743.1	742.6	742.2	741.5	740.6	739.6	738.7	737.7
12.5°	728.9	728.0	727.2	725.9	724.3	722.8	721.2	719.7
15°	702.2	699.3	696.3	694.0	692.4	690.9	689.3	687.8
17.5°	672.0	668.5	665.0	661.9	659.2	656.5	653.8	651.1
20°	651.0	647.1	643.2	639.5	636.1	632.6	629.2	625.8
22.5°	627.9	622.9	617.9	614.1	611.5	609.0	606.4	603.8
25°	589.7	583.3	576.9	572.5	570.1	567.8	565.5	563.2
27.5°	553.3	545.7	538.3	532.7	529.0	525.3	521.5	517.8
30°	527.4	519.5	511.5	505.4	501.1	497.0	492.8	488.5
32.5°	501.5	492.5	483.3	476.8	472.9	468.9	464.9	460.9
35°	461.1	451.2	441.4	434.7	431.3	427.8	424.4	420.9
37.5°	421.6	410.8	399.9	392.5	388.6	384.7	380.7	376.7
40°	395.2	384.1	373.0	365.4	361.4	357.3	353.2	349.1
42.5°	368.5	357.0	345.6	337.9	333.9	330.0	326.0	322.1
45°	329.7	318.7	307.6	300.1	296.3	292.6	288.8	285.1
47.5°	292.0	281.0	269.9	262.7	259.3	255.9	252.4	249.0
50°	267.7	256.9	246.1	239.1	235.8	232.5	229.2	225.9
52.5°	244.8	234.4	223.9	217.3	214.2	211.2	208.1	205.1
55°	210.0	200.6	191.2	185.0	182.1	179.1	176.2	173.1
57.5°	178.3	169.8	161.2	155.6	153.1	150.6	148.1	145.5
60°	156.5	148.5	140.5	135.3	132.8	130.3	127.8	125.3
62.5°	137.5	130.0	122.3	117.8	116.3	114.8	113.3	111.8
65°	111.9	106.5	101.2	98.3	97.8	97.4	96.9	96.4
67.5°	90.3	87.8	85.4	84.0	83.4	82.9	82.5	81.9
70°	78.5	77.0	75.4	74.3	73.7	73.0	72.4	71.8
72.5°	68.3	67.0	65.7	64.8	64.5	64.1	63.7	63.3
75°	54.1	53.1	51.9	51.3	51.2	51.0	50.8	50.7
77.5°	41.0	40.3	39.8	39.3	39.0	38.8	38.5	38.3
80°	32.5	32.0	31.3	31.0	31.0	31.0	31.0	31.0
82.5°	24.6	24.2	23.8	23.7	23.7	23.7	23.7	23.7
85°	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
87.5°	5.7	5.6	5.5	5.5	5.5	5.6	5.6	5.6
90°	6.8	7.1	7.4	7.7	7.8	7.9	8.1	8.2
92.5°	7.4	7.6	7.7	7.9	8.0	8.1	8.1	8.2
95°	12.5	12.9	13.2	13.4	13.3	13.2	13.2	13.1
97.5°	16.5	16.7	17.0	17.2	17.2	17.3	17.4	17.5
100°	18.5	19.0	19.5	19.9	20.0	20.2	20.3	20.5
102.5°	19.2	20.0	20.6	21.1	21.3	21.5	21.7	21.9
105°	20.1	20.8	21.6	22.1	22.3	22.6	22.9	23.2
107.5°	24.5	23.8	23.0	22.7	23.0	23.3	23.6	23.8
110°	39.8	33.0	26.2	23.0	23.3	23.6	23.8	24.0



TEST NUMBER: P331648-830

CATALOG NUMBER: SA2XXRDIP-C485D330U830-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	85.1	60.4	35.7	23.5	23.7	23.8	24.1	24.3
115°	125.4	94.0	62.6	44.5	39.6	34.8	29.9	25.0
117.5°	193.1	185.5	178.0	166.2	150.1	134.1	118.1	102.1
120°	225.0	225.8	226.6	222.4	213.3	204.2	195.0	185.9
122.5°	238.7	239.2	239.7	239.0	237.3	235.5	233.8	232.0
125°	258.4	258.9	259.4	259.8	260.0	260.1	260.3	260.5
127.5°	276.7	277.4	278.1	278.4	278.5	278.5	278.5	278.6
130°	288.2	289.0	289.7	290.1	290.0	289.9	289.9	289.8
132.5°	299.5	300.1	300.8	301.0	301.0	301.0	300.9	300.8
135°	315.6	316.2	316.9	317.2	317.1	316.9	316.8	316.6
137.5°	330.5	331.1	331.8	332.0	331.8	331.6	331.3	331.1
140°	340.1	340.7	341.3	341.5	341.1	340.8	340.4	340.1
142.5°	349.0	349.6	350.2	350.2	349.9	349.6	349.2	348.8
145°	361.5	361.9	362.4	362.5	362.1	361.8	361.5	361.1
147.5°	372.3	372.7	373.1	373.1	372.8	372.5	372.2	371.9
150°	379.0	379.4	379.8	379.8	379.6	379.2	378.8	378.5
152.5°	385.1	385.5	385.9	385.9	385.4	385.0	384.6	384.1
155°	393.3	393.7	394.2	394.1	393.5	393.0	392.5	391.9
157.5°	400.3	400.8	401.1	401.1	400.6	400.1	399.5	399.1
160°	404.4	404.7	405.1	405.1	404.6	404.2	403.7	403.2
162.5°	408.0	408.5	409.0	409.0	408.3	407.7	407.2	406.6
165°	412.6	413.1	413.6	413.6	413.1	412.6	412.2	411.7
167.5°	416.5	417.0	417.5	417.4	416.8	416.1	415.6	414.9
170°	418.5	419.0	419.4	419.3	418.8	418.1	417.5	416.9
172.5°	419.9	420.4	420.8	420.8	420.2	419.6	419.0	418.4
175°	421.5	422.0	422.4	422.4	421.7	421.0	420.3	419.6
177.5°	421.7	422.1	422.4	422.4	421.9	421.4	420.9	420.5
180°	421.1	421.1	421.1	421.1	421.1	421.1	421.1	421.1

(END OF REPORT)