

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: P331378-830

Luminaire Tested: **SA2XXDIP-C865D330U830-4F0-1E-UDD-D**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331378-830  
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: SA2XXDIP-C865D330U830-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 330 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

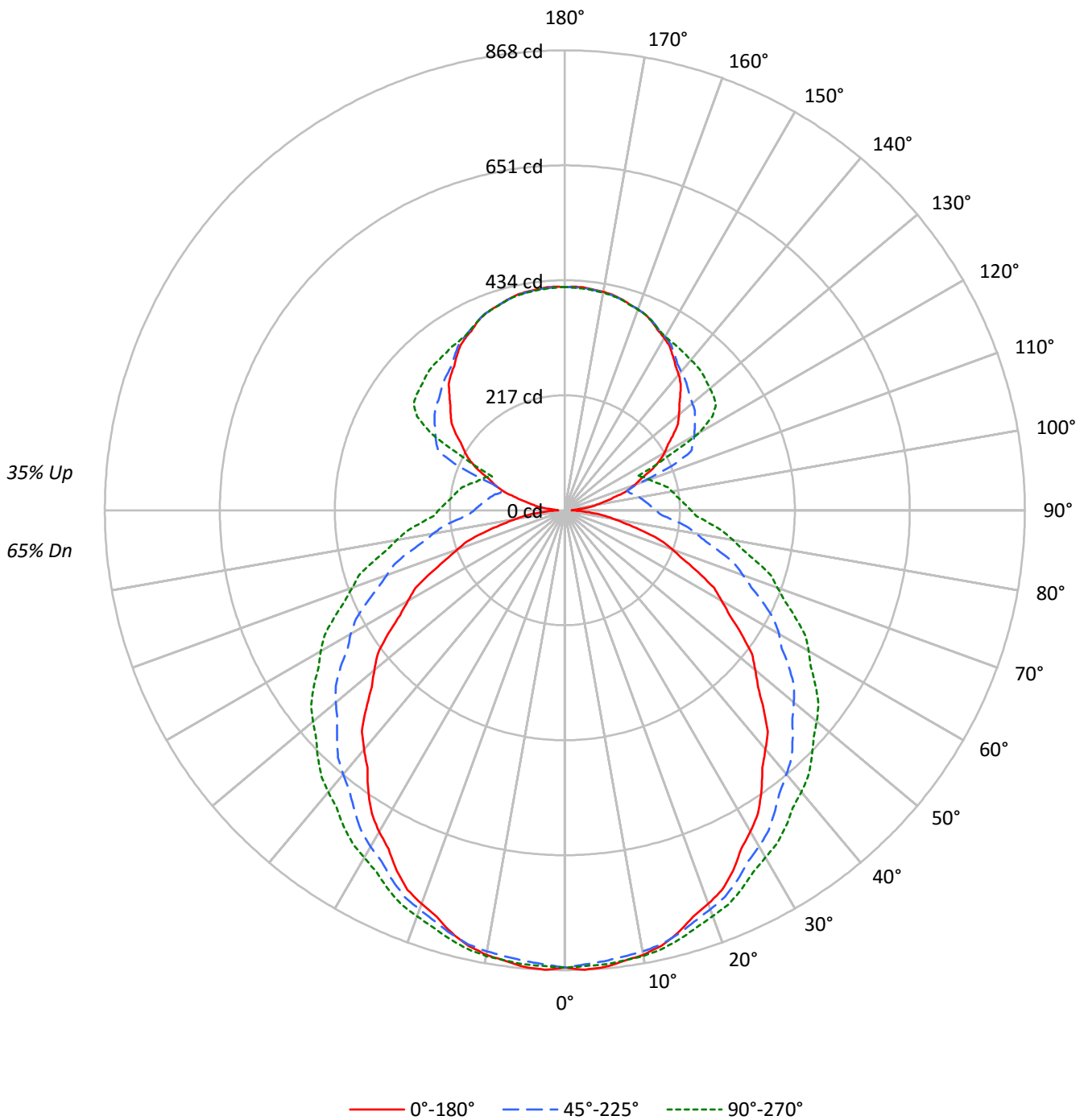
Lumens per Lamp: N/A  
Luminaire Lumens: 4527.6 lumens  
Efficiency: N/A  
Efficacy: 104.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Direct

Input Watts (W): 43.5  
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: P331378-830  
CATALOG NUMBER: SA2XXDIP-C865D330U830-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P331378-830

CATALOG NUMBER: SA2XXDIP-C865D330U830-4F0-1E-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	111	111	111	111	104	104	104	104	91	91	91	80	80	80	70	70	70	65
1	99	94	89	85	93	88	84	80	77	74	71	68	65	63	58	57	55	50
2	89	81	74	68	84	76	70	64	67	62	57	58	54	51	50	47	45	41
3	81	70	62	56	76	66	59	53	58	52	47	51	46	42	44	40	37	34
4	74	62	53	47	69	58	50	44	51	45	40	45	40	36	39	35	32	28
5	68	55	46	40	63	52	44	38	46	39	34	40	35	31	35	31	27	24
6	62	49	41	34	58	47	39	33	41	35	30	36	31	27	32	27	24	21
7	58	44	36	30	54	42	34	29	37	31	26	33	27	23	29	24	21	18
8	54	40	32	26	50	38	31	25	34	28	23	30	25	21	26	22	19	16
9	50	37	29	23	47	35	28	23	31	25	21	28	22	19	24	20	17	15
10	47	34	26	21	44	32	25	20	29	23	19	26	20	17	23	18	15	13

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	13934	13934	13934
5°	14000	13412	13361
10°	13914	13017	12870
15°	13722	12596	12353
20°	13478	12147	11855
25°	13241	11713	11401
30°	12903	11268	10947
35°	12562	10837	10627
40°	12203	10472	10307
45°	11862	10143	10033
50°	11495	9847	9765
55°	11112	9528	9489
60°	10644	9199	9199
65°	10156	8809	8853
70°	9605	8393	8482
75°	8902	7984	8141
80°	7800	7568	7791
85°	6748	7205	7523



TEST NUMBER: P331378-830

CATALOG NUMBER: SA2XXDIP-C865D330U830-4F0-1E-UDD-D

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	81.8	1.8
10°-20°	234.5	5.2
20°-30°	355.3	7.8
30°-40°	432.8	9.6
40°-50°	465.6	10.3
50°-60°	452.2	10.0
60°-70°	394.8	8.7
70°-80°	304.0	6.7
80°-90°	205.0	4.5
90°-100°	154.6	3.4
100°-110°	154.1	3.4
110°-120°	205.5	4.5
120°-130°	265.2	5.9
130°-140°	257.6	5.7
140°-150°	227.5	5.0
150°-160°	180.7	4.0
160°-170°	116.4	2.6
170°-180°	40.1	0.9
0°-30°	671.6	14.8
0°-40°	1104.4	24.4
0°-60°	2022.2	44.7
0°-90°	2926.0	64.6
90°-120°	514.2	11.4
90°-150°	1264.5	27.9
90°-180°	1602.0	35.4
0°-180°	4527.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	863	863	863	863	863	
5°	865	862	854	861	860	82
15°	826	828	828	839	838	232
25°	750	759	770	785	789	345
35°	647	668	692	718	728	404
45°	530	565	608	645	659	409
55°	406	453	516	560	578	363
65°	278	340	413	462	480	276
75°	154	224	304	356	374	163
85°	45	123	203	253	273	48
90°	13	89	171	221	238	9
95°	30	80	156	203	219	32
105°	99	141	126	172	188	106
115°	180	202	263	165	151	177
125°	250	257	300	335	348	223
135°	308	313	328	356	367	238
145°	356	356	360	370	375	223
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	



TEST NUMBER: P331378-830

CATALOG NUMBER: SA2XXDIP-C865D330U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	863.0	863.0	863.0	863.0	863.0	863.0	863.0	863.0	863.0	863.0	863.0
2.5°	868.0	867.3	866.7	866.0	865.3	864.2	862.6	861.1	859.5	858.0	859.1
5°	865.4	864.7	863.8	863.0	862.1	860.9	859.2	857.5	855.9	854.2	855.9
7.5°	857.7	857.1	856.6	856.1	855.5	854.6	853.3	852.1	850.7	849.5	851.5
10°	851.8	851.2	850.6	850.1	849.5	848.9	848.0	847.2	846.3	845.5	847.7
12.5°	841.7	841.9	842.0	842.1	842.2	841.9	841.3	840.7	840.1	839.4	841.7
15°	825.5	826.0	826.6	827.2	827.6	827.9	827.9	827.9	827.9	827.9	830.5
17.5°	804.5	805.6	806.8	807.9	809.1	810.1	811.1	811.9	812.8	813.7	816.3
20°	790.4	791.8	793.2	794.7	796.0	797.3	798.3	799.5	800.6	801.7	804.7
22.5°	775.4	777.0	778.6	780.2	781.8	783.4	785.0	786.6	788.2	789.7	792.8
25°	750.5	752.3	754.3	756.3	758.2	760.4	762.9	765.4	767.9	770.4	773.7
27.5°	720.4	723.6	726.7	729.9	733.1	736.1	739.0	742.1	745.0	747.9	752.1
30°	700.4	704.0	707.7	711.2	714.8	718.5	722.1	725.7	729.3	732.9	737.4
32.5°	678.3	682.4	686.5	690.6	694.7	698.8	703.0	707.4	711.6	715.9	721.0
35°	646.6	651.3	656.1	660.8	665.5	670.5	675.8	681.1	686.4	691.6	697.8
37.5°	612.1	617.6	623.0	628.4	633.9	640.0	646.9	653.7	660.5	667.4	674.2
40°	589.1	595.2	601.3	607.5	613.5	620.4	627.8	635.4	642.9	650.4	657.6
42.5°	567.0	573.2	579.3	585.4	591.5	598.9	607.5	616.1	624.7	633.4	641.2
45°	530.3	537.8	545.3	552.8	560.3	568.9	578.6	588.4	598.1	607.8	616.4
47.5°	494.0	502.2	510.4	518.6	526.7	536.5	547.9	559.3	570.7	582.1	591.1
50°	469.0	477.6	486.3	494.8	503.5	514.1	526.5	539.0	551.6	564.1	573.5
52.5°	445.0	454.0	463.2	472.2	481.3	492.4	505.6	518.7	531.9	545.1	554.7
55°	406.5	416.5	426.5	436.5	446.5	458.7	473.2	487.7	502.1	516.5	526.5
57.5°	368.4	379.8	391.1	402.3	413.6	426.6	441.3	456.1	470.8	485.5	496.3
60°	341.5	353.4	365.3	377.3	389.3	403.1	419.0	434.8	450.6	466.6	477.1
62.5°	317.4	329.8	342.2	354.6	367.0	381.2	397.0	412.8	428.7	444.5	455.7
65°	277.7	291.2	304.9	318.5	332.2	347.1	363.5	379.9	396.3	412.7	424.1
67.5°	241.1	255.3	269.6	283.8	298.0	313.6	330.4	347.1	363.9	380.7	392.2
70°	215.1	229.6	244.0	258.4	273.0	288.8	306.0	323.2	340.4	357.7	369.7
72.5°	191.1	206.0	220.9	235.8	250.7	266.8	284.4	301.8	319.2	336.7	348.5
75°	153.8	169.4	184.9	200.6	216.1	232.8	250.5	268.3	286.2	303.9	315.8
77.5°	117.8	134.1	150.4	166.6	182.9	200.1	218.2	236.3	254.3	272.4	284.3
80°	93.8	110.7	127.7	144.7	161.6	179.1	197.2	215.3	233.3	251.4	263.1
82.5°	73.8	90.5	107.3	123.9	140.7	158.3	176.5	194.8	213.1	231.4	243.1
85°	45.1	62.3	79.5	96.7	114.0	131.5	149.2	167.0	184.8	202.6	214.3
87.5°	24.6	41.3	58.0	74.7	91.4	108.8	126.7	144.5	162.4	180.3	191.7
90°	12.8	29.7	46.6	63.4	80.3	97.8	116.2	134.5	152.9	171.2	182.7
92.5°	17.6	32.6	47.5	62.5	77.4	93.6	110.9	128.4	145.8	163.2	174.3
95°	29.8	40.6	51.5	62.3	73.1	87.1	104.2	121.4	138.6	155.7	166.6
97.5°	48.1	53.3	58.7	64.0	69.4	80.6	97.6	114.8	131.9	149.0	159.6
100°	62.7	63.7	64.8	65.7	66.7	75.6	92.3	109.1	125.7	142.4	153.3
102.5°	77.8	85.2	92.7	100.1	107.5	114.0	119.4	125.0	130.4	135.9	146.7
105°	98.9	109.0	119.0	129.1	139.3	142.3	138.3	134.2	130.2	126.1	136.7
107.5°	124.4	132.5	140.6	148.7	156.7	156.7	148.4	140.0	131.7	123.3	132.0
110°	140.0	146.9	154.0	161.0	168.0	168.4	162.5	156.6	150.6	144.6	146.8



TEST NUMBER: P331378-830

CATALOG NUMBER: SA2XXDIP-C865D330U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	155.6	161.6	167.5	173.4	179.4	186.3	194.4	202.6	210.7	218.9	203.0
115°	180.2	184.5	188.7	192.8	197.1	206.2	220.5	234.7	248.8	263.1	240.1
117.5°	201.0	204.2	207.5	210.8	214.1	222.2	234.9	247.6	260.3	273.1	273.7
120°	217.1	219.2	221.3	223.5	225.6	232.8	245.2	257.5	269.8	282.2	290.8
122.5°	230.7	232.2	233.8	235.3	236.8	243.5	255.2	267.0	278.8	290.6	298.6
125°	250.2	251.2	252.0	252.9	253.8	259.3	269.5	279.7	289.8	300.0	308.0
127.5°	269.1	269.8	270.5	271.2	271.9	276.3	284.5	292.6	300.7	308.9	316.4
130°	281.1	281.8	282.7	283.4	284.3	287.9	294.5	301.1	307.7	314.2	321.7
132.5°	293.2	293.9	294.5	295.2	295.8	298.8	304.0	309.2	314.5	319.7	326.9
135°	307.8	308.9	310.0	311.0	312.2	314.4	317.8	321.2	324.6	327.9	334.5
137.5°	323.9	324.5	325.3	325.9	326.7	328.0	329.9	331.8	333.8	335.6	341.4
140°	334.3	334.6	334.9	335.2	335.4	336.2	337.5	338.7	340.1	341.4	346.5
142.5°	343.1	343.4	343.6	343.7	343.9	344.6	345.5	346.5	347.4	348.4	352.5
145°	355.6	355.6	355.5	355.4	355.3	355.9	357.0	358.3	359.4	360.5	362.7
147.5°	367.7	367.4	367.1	366.8	366.6	367.0	368.2	369.4	370.5	371.6	372.2
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



TEST NUMBER: P331378-830

CATALOG NUMBER: SA2XXDIP-C865D330U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	863.0	863.0	863.0	863.0	863.0	863.0	863.0	863.0
2.5°	860.2	861.3	862.4	862.8	862.3	861.9	861.4	861.0
5°	857.5	859.2	860.9	861.6	861.3	861.0	860.7	860.4
7.5°	853.5	855.5	857.5	858.4	858.1	857.8	857.5	857.2
10°	849.9	852.2	854.4	855.4	855.1	854.8	854.5	854.2
12.5°	844.0	846.1	848.4	849.3	849.0	848.8	848.5	848.2
15°	832.9	835.5	838.0	839.1	838.8	838.5	838.2	838.0
17.5°	819.0	821.5	824.2	825.5	825.5	825.5	825.5	825.5
20°	807.9	810.9	813.9	815.5	815.5	815.5	815.5	815.5
22.5°	795.8	798.9	801.9	803.7	804.1	804.6	805.0	805.5
25°	777.1	780.4	783.8	785.9	786.6	787.5	788.3	789.2
27.5°	756.4	760.6	764.8	767.2	767.9	768.5	769.1	769.7
30°	741.8	746.2	750.7	753.4	754.1	755.0	755.8	756.7
32.5°	726.1	731.2	736.3	739.7	741.1	742.6	744.1	745.6
35°	703.9	710.0	716.1	720.1	722.1	724.1	725.9	727.9
37.5°	680.9	687.7	694.5	698.9	701.0	703.0	705.1	707.2
40°	664.8	672.0	679.3	684.1	686.6	689.1	691.6	694.2
42.5°	649.1	657.0	665.0	670.1	672.6	675.1	677.6	680.1
45°	625.1	633.7	642.3	648.0	650.8	653.6	656.4	659.1
47.5°	600.1	609.1	618.1	624.2	627.2	630.3	633.3	636.4
50°	583.0	592.4	601.9	608.1	611.1	614.3	617.3	620.4
52.5°	564.4	574.1	583.7	590.2	593.5	596.8	600.0	603.3
55°	536.6	546.6	556.6	563.4	566.9	570.6	574.2	577.8
57.5°	507.1	517.8	528.7	535.9	539.5	543.2	546.9	550.5
60°	487.7	498.2	508.8	515.9	519.9	523.8	527.6	531.6
62.5°	466.9	478.2	489.4	496.9	500.5	504.2	507.8	511.5
65°	435.5	447.0	458.4	465.8	469.4	473.1	476.6	480.2
67.5°	403.7	415.2	426.8	434.4	438.2	442.0	445.7	449.5
70°	381.6	393.5	405.5	413.1	416.5	419.8	423.2	426.5
72.5°	360.1	371.8	383.6	391.4	395.5	399.4	403.5	407.5
75°	327.8	339.8	351.8	359.5	363.2	366.7	370.3	374.0
77.5°	296.2	308.1	320.0	327.9	331.8	335.6	339.6	343.5
80°	274.8	286.4	298.1	305.9	309.7	313.7	317.5	321.4
82.5°	254.8	266.4	278.1	285.8	289.5	293.0	296.7	300.4
85°	225.9	237.6	249.3	257.1	261.0	264.9	268.7	272.7
87.5°	203.1	214.5	225.9	233.5	237.0	240.6	244.2	247.8
90°	194.1	205.6	217.0	224.5	227.9	231.4	234.9	238.4
92.5°	185.3	196.3	207.5	214.7	218.1	221.5	224.9	228.4
95°	177.5	188.4	199.3	206.4	209.6	212.9	216.2	219.4
97.5°	170.1	180.7	191.2	198.1	201.5	204.9	208.2	211.6
100°	164.1	174.9	185.8	192.7	196.0	199.2	202.4	205.6
102.5°	157.5	168.2	179.0	186.0	189.3	192.5	195.8	199.0
105°	147.1	157.6	168.1	174.9	178.2	181.6	184.9	188.2
107.5°	140.5	149.1	157.7	163.6	166.9	170.2	173.6	176.9
110°	148.9	151.0	153.2	155.8	159.2	162.5	165.8	169.2





TEST NUMBER: P331378-830

CATALOG NUMBER: SA2XXDIP-C865D330U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	187.2	171.4	155.6	149.3	152.6	155.8	159.1	162.4
115°	217.1	194.0	171.0	158.6	156.7	155.0	153.2	151.3
117.5°	274.4	274.9	275.6	269.4	256.2	243.0	229.8	216.6
120°	299.4	307.9	316.5	317.8	311.7	305.7	299.5	293.4
122.5°	306.6	314.7	322.7	327.2	328.0	328.9	329.7	330.5
125°	316.0	324.0	332.0	337.3	340.0	342.7	345.4	348.1
127.5°	324.0	331.6	339.1	344.2	346.7	349.2	351.7	354.1
130°	329.1	336.5	343.9	348.7	350.9	353.1	355.2	357.3
132.5°	333.9	341.0	348.1	352.7	354.9	357.0	359.2	361.4
135°	341.0	347.5	354.0	358.4	360.4	362.5	364.6	366.6
137.5°	347.2	353.0	358.7	362.5	364.1	365.8	367.4	369.1
140°	351.5	356.6	361.7	364.8	366.2	367.5	368.8	370.1
142.5°	356.7	360.7	364.9	367.5	368.5	369.7	370.8	371.9
145°	364.8	366.9	369.1	370.7	371.7	372.8	373.8	374.8
147.5°	372.8	373.3	373.9	374.4	374.8	375.1	375.5	375.9
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)