

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: P331378-840

Luminaire Tested: **SA2XXDIP-C865D330U840-4F0-1E-UDD-D**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331378-840
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-C865D330U840-4F0-1E-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

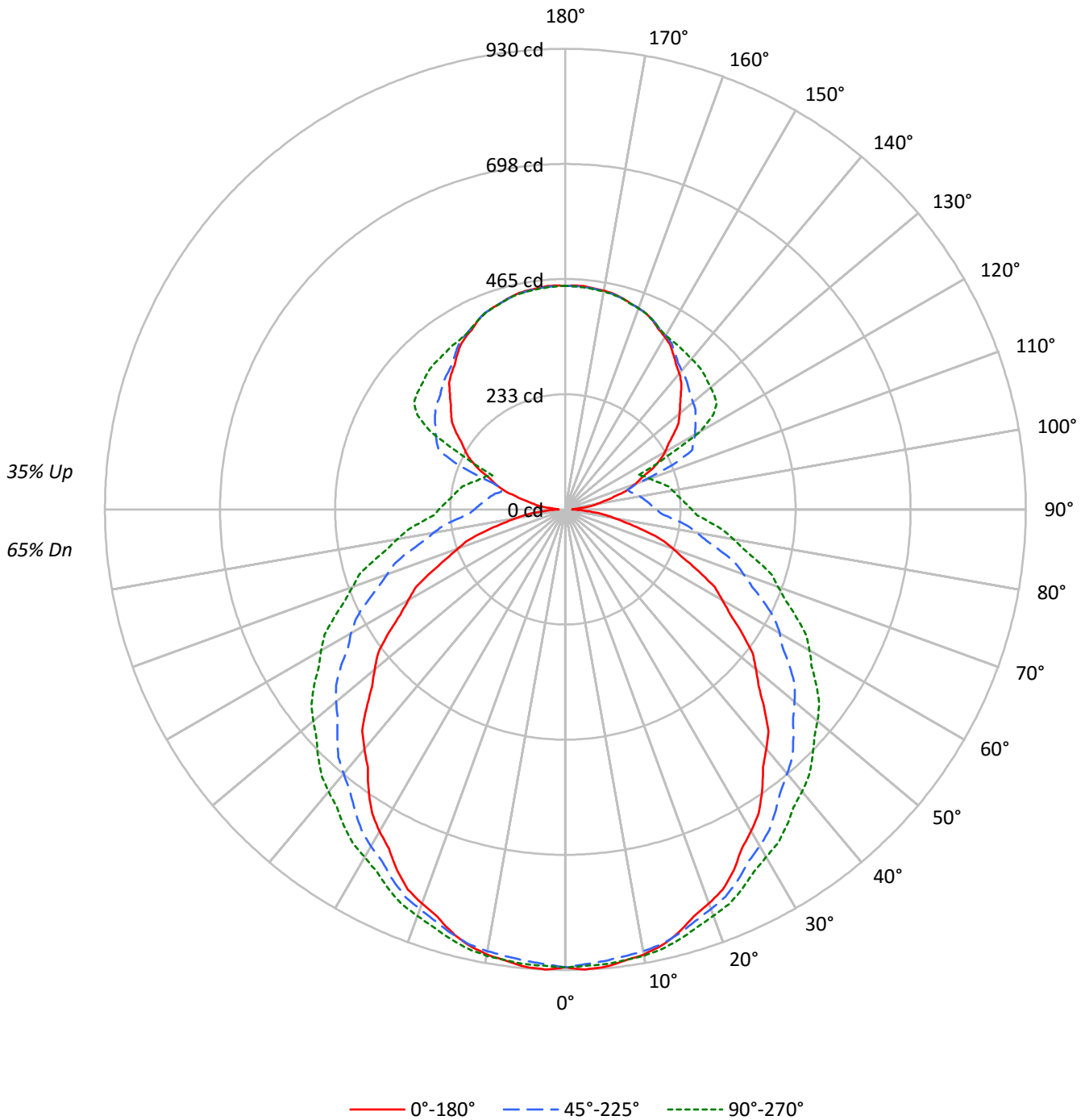
Lumens per Lamp: N/A
Luminaire Lumens: 4851.0 lumens
Efficiency: N/A
Efficacy: 111.5 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')
CIE Type: Semi-Direct

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: P331378-840
CATALOG NUMBER: SA2XXDIP-C865D330U840-4F0-1E-UDD-D

Luminous Intensity Polar Plot





TEST NUMBER: P331378-840

CATALOG NUMBER: SA2XXDIP-C865D330U840-4F0-1E-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	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°	14928	14928	14928
5°	15002	14370	14315
10°	14907	13945	13789
15°	14701	13496	13236
20°	14442	13015	12701
25°	14187	12551	12216
30°	13824	12074	11729
35°	13459	11611	11386
40°	13075	11219	11044
45°	12709	10869	10750
50°	12316	10551	10462
55°	11908	10209	10166
60°	11404	9856	9857
65°	10880	9439	9485
70°	10292	8992	9089
75°	9539	8554	8722
80°	8357	8107	8349
85°	7227	7720	8061



TEST NUMBER: P331378-840

CATALOG NUMBER: SA2XXDIP-C865D330U840-4F0-1E-UDD-D

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.6	1.8
10°-20°	251.2	5.2
20°-30°	380.7	7.8
30°-40°	463.7	9.6
40°-50°	498.9	10.3
50°-60°	484.5	10.0
60°-70°	423.0	8.7
70°-80°	325.7	6.7
80°-90°	219.7	4.5
90°-100°	165.6	3.4
100°-110°	165.2	3.4
110°-120°	220.2	4.5
120°-130°	284.1	5.9
130°-140°	276.0	5.7
140°-150°	243.7	5.0
150°-160°	193.6	4.0
160°-170°	124.7	2.6
170°-180°	42.9	0.9
0°-30°	719.6	14.8
0°-40°	1183.3	24.4
0°-60°	2166.6	44.7
0°-90°	3135.0	64.6
90°-120°	551.0	11.4
90°-150°	1354.8	27.9
90°-180°	1716.0	35.4
0°-180°	4851.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	925	925	925	925	925	
5°	927	923	915	923	922	88
15°	884	887	887	898	898	249
25°	804	814	826	841	846	369
35°	693	716	741	769	780	433
45°	568	605	651	691	706	438
55°	436	485	553	600	619	389
65°	298	364	442	495	514	295
75°	165	240	326	381	401	174
85°	48	132	217	271	292	52
90°	14	95	183	236	255	10
95°	32	86	167	217	235	34
105°	106	151	135	184	202	114
115°	193	216	282	177	162	190
125°	268	275	321	359	373	239
135°	330	336	351	382	393	255
145°	381	381	386	396	402	239
155°	420	417	420	422	420	193
165°	442	440	441	443	441	125
175°	452	450	451	453	450	43
180°	451	451	451	451	451	



TEST NUMBER: P331378-840

CATALOG NUMBER: SA2XXDIP-C865D330U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6
2.5°	930.0	929.3	928.6	927.9	927.2	925.9	924.2	922.6	920.9	919.3	920.5
5°	927.3	926.5	925.5	924.6	923.7	922.4	920.6	918.8	917.1	915.2	917.1
7.5°	919.0	918.4	917.8	917.3	916.7	915.6	914.2	912.9	911.5	910.2	912.3
10°	912.6	912.0	911.4	910.8	910.2	909.5	908.6	907.7	906.8	905.8	908.3
12.5°	901.8	902.0	902.1	902.2	902.3	902.0	901.4	900.7	900.1	899.4	901.8
15°	884.4	885.0	885.7	886.3	886.8	887.1	887.1	887.1	887.1	887.1	889.8
17.5°	861.9	863.1	864.4	865.7	866.9	868.0	869.0	869.9	870.9	871.8	874.6
20°	846.9	848.4	849.9	851.4	852.8	854.2	855.4	856.6	857.8	859.0	862.2
22.5°	830.8	832.5	834.2	836.0	837.7	839.4	841.1	842.7	844.4	846.1	849.4
25°	804.1	806.1	808.2	810.3	812.3	814.8	817.4	820.1	822.7	825.5	829.0
27.5°	771.8	775.3	778.6	782.0	785.5	788.7	791.8	795.1	798.2	801.3	805.9
30°	750.4	754.3	758.2	762.0	765.9	769.8	773.7	777.5	781.4	785.3	790.0
32.5°	726.8	731.1	735.5	739.9	744.3	748.7	753.3	757.9	762.4	767.0	772.5
35°	692.8	697.8	703.0	708.0	713.1	718.4	724.1	729.7	735.4	741.0	747.6
37.5°	655.8	661.7	667.5	673.3	679.1	685.7	693.1	700.4	707.7	715.1	722.4
40°	631.2	637.7	644.3	650.9	657.3	664.7	672.7	680.8	688.8	696.8	704.6
42.5°	607.5	614.1	620.7	627.2	633.8	641.7	650.9	660.1	669.3	678.6	687.0
45°	568.2	576.2	584.2	592.3	600.4	609.6	620.0	630.5	640.9	651.3	660.5
47.5°	529.3	538.1	546.8	555.6	564.3	574.8	587.0	599.3	611.5	623.7	633.3
50°	502.5	511.7	521.0	530.2	539.5	550.8	564.1	577.5	591.0	604.4	614.5
52.5°	476.8	486.5	496.2	505.9	515.6	527.6	541.7	555.7	569.9	584.0	594.3
55°	435.6	446.3	457.0	467.7	478.4	491.5	507.0	522.5	538.0	553.4	564.1
57.5°	394.8	406.9	419.0	431.0	443.1	457.1	472.8	488.7	504.4	520.2	531.8
60°	365.9	378.6	391.4	404.2	417.1	431.9	448.9	465.9	482.8	499.9	511.2
62.5°	340.1	353.4	366.7	379.9	393.2	408.4	425.4	442.3	459.3	476.3	488.3
65°	297.5	312.0	326.7	341.2	355.9	371.9	389.5	407.1	424.6	442.2	454.4
67.5°	258.3	273.6	288.8	304.1	319.3	336.0	354.0	371.9	389.9	407.9	420.2
70°	230.5	246.0	261.5	276.9	292.5	309.4	327.9	346.3	364.8	383.2	396.1
72.5°	204.8	220.8	236.7	252.7	268.6	285.9	304.7	323.4	342.0	360.7	373.3
75°	164.8	181.5	198.1	214.9	231.6	249.4	268.4	287.5	306.6	325.6	338.4
77.5°	126.2	143.7	161.2	178.5	196.0	214.4	233.8	253.2	272.5	291.9	304.6
80°	100.5	118.7	136.8	155.0	173.2	191.9	211.3	230.7	249.9	269.3	281.9
82.5°	79.1	96.9	114.9	132.8	150.8	169.6	189.1	208.7	228.3	247.9	260.4
85°	48.3	66.8	85.1	103.6	122.1	140.9	159.9	178.9	198.0	217.1	229.6
87.5°	26.4	44.2	62.1	80.1	98.0	116.5	135.7	154.8	174.0	193.2	205.4
90°	13.7	31.8	49.9	68.0	86.0	104.8	124.5	144.1	163.8	183.4	195.7
92.5°	18.9	34.9	50.9	67.0	82.9	100.3	118.9	137.5	156.2	174.8	186.7
95°	31.9	43.5	55.1	66.8	78.4	93.3	111.7	130.1	148.5	166.8	178.5
97.5°	51.5	57.2	62.9	68.6	74.3	86.3	104.6	123.0	141.3	159.7	171.0
100°	67.2	68.3	69.4	70.4	71.5	81.0	98.9	116.8	134.7	152.6	164.2
102.5°	83.3	91.3	99.3	107.2	115.2	122.1	127.9	133.9	139.8	145.6	157.1
105°	105.9	116.7	127.5	138.4	149.3	152.5	148.1	143.8	139.5	135.1	146.4
107.5°	133.3	142.0	150.7	159.4	167.9	167.8	159.0	150.0	141.1	132.1	141.4
110°	150.0	157.4	165.0	172.5	180.0	180.5	174.1	167.7	161.4	154.9	157.2



TEST NUMBER: P331378-840

CATALOG NUMBER: SA2XXDIP-C865D330U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	166.7	173.1	179.5	185.8	192.2	199.7	208.3	217.0	225.7	234.5	217.5
115°	193.1	197.6	202.2	206.6	211.2	221.0	236.2	251.5	266.6	281.9	257.2
117.5°	215.3	218.8	222.4	225.9	229.4	238.0	251.7	265.3	278.9	292.6	293.3
120°	232.6	234.9	237.1	239.4	241.7	249.4	262.7	275.9	289.1	302.4	311.5
122.5°	247.2	248.8	250.4	252.1	253.7	260.8	273.5	286.1	298.7	311.3	319.9
125°	268.1	269.1	270.0	270.9	272.0	277.8	288.7	299.6	310.5	321.4	330.0
127.5°	288.3	289.0	289.8	290.5	291.3	296.0	304.8	313.5	322.1	330.9	339.0
130°	301.1	301.9	302.9	303.7	304.6	308.5	315.6	322.7	329.7	336.7	344.7
132.5°	314.2	314.9	315.6	316.3	316.9	320.1	325.7	331.3	337.0	342.5	350.2
135°	329.8	330.9	332.1	333.3	334.5	336.9	340.5	344.2	347.8	351.3	358.4
137.5°	347.0	347.7	348.5	349.2	350.0	351.4	353.5	355.5	357.6	359.6	365.8
140°	358.2	358.5	358.8	359.1	359.3	360.2	361.6	362.9	364.4	365.8	371.2
142.5°	367.6	367.9	368.1	368.3	368.5	369.2	370.2	371.2	372.2	373.2	377.7
145°	381.0	381.0	380.9	380.8	380.7	381.3	382.5	383.8	385.1	386.3	388.6
147.5°	393.9	393.6	393.3	393.0	392.8	393.2	394.5	395.8	397.0	398.2	398.8
150°	402.2	401.7	401.2	400.7	400.2	400.6	401.7	402.9	404.0	405.3	405.7
152.5°	409.3	408.8	408.2	407.6	407.1	407.3	408.4	409.5	410.6	411.7	412.1
155°	419.6	418.9	418.3	417.6	417.0	417.1	418.0	418.8	419.7	420.5	421.0
157.5°	427.6	427.1	426.5	426.0	425.4	425.5	426.1	426.7	427.3	427.9	428.4
160°	432.3	431.9	431.4	431.0	430.6	430.6	431.0	431.4	431.9	432.3	432.7
162.5°	436.5	436.1	435.7	435.2	434.7	434.7	435.0	435.5	435.9	436.3	436.8
165°	442.1	441.7	441.2	440.8	440.4	440.3	440.5	440.7	440.9	441.1	441.6
167.5°	446.3	445.9	445.5	444.9	444.5	444.4	444.6	444.8	445.0	445.2	445.8
170°	448.7	448.2	447.8	447.4	446.9	446.8	446.9	447.1	447.2	447.4	447.9
172.5°	450.2	449.8	449.3	448.9	448.5	448.3	448.5	448.6	448.8	448.9	449.4
175°	452.2	451.7	451.2	450.7	450.2	450.0	450.2	450.3	450.5	450.6	451.1
177.5°	452.5	452.1	451.7	451.3	450.9	450.8	450.8	450.9	450.9	451.0	451.4
180°	451.2	451.2	451.2	451.2	451.2	451.2	451.2	451.2	451.2	451.2	451.2



TEST NUMBER: P331378-840

CATALOG NUMBER: SA2XXDIP-C865D330U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6
2.5°	921.6	922.8	924.0	924.4	923.9	923.4	922.9	922.5
5°	918.8	920.6	922.4	923.1	922.8	922.5	922.2	921.9
7.5°	914.4	916.6	918.8	919.7	919.4	919.1	918.8	918.5
10°	910.6	913.0	915.4	916.5	916.1	915.8	915.5	915.2
12.5°	904.2	906.6	909.0	910.0	909.7	909.4	909.1	908.8
15°	892.4	895.1	897.9	899.0	898.7	898.4	898.1	897.9
17.5°	877.5	880.2	883.0	884.4	884.4	884.4	884.4	884.4
20°	865.6	868.8	872.0	873.7	873.7	873.7	873.7	873.7
22.5°	852.6	856.0	859.2	861.1	861.5	862.0	862.5	863.0
25°	832.6	836.2	839.8	842.0	842.8	843.7	844.7	845.6
27.5°	810.4	815.0	819.4	822.0	822.7	823.3	824.0	824.7
30°	794.8	799.5	804.4	807.2	808.0	808.9	809.8	810.7
32.5°	778.0	783.5	788.9	792.5	794.1	795.7	797.3	798.9
35°	754.2	760.7	767.3	771.5	773.7	775.8	777.8	779.9
37.5°	729.5	736.8	744.1	748.8	751.0	753.3	755.5	757.7
40°	712.3	720.0	727.8	733.0	735.7	738.3	741.0	743.8
42.5°	695.5	704.0	712.5	718.0	720.6	723.4	726.0	728.7
45°	669.7	678.9	688.2	694.3	697.3	700.2	703.3	706.2
47.5°	643.0	652.6	662.3	668.7	672.0	675.3	678.5	681.9
50°	624.6	634.7	644.9	651.6	654.8	658.1	661.4	664.7
52.5°	604.7	615.1	625.4	632.4	635.9	639.4	642.9	646.4
55°	574.9	585.6	596.3	603.6	607.4	611.4	615.2	619.0
57.5°	543.3	554.8	566.4	574.2	578.0	582.0	585.9	589.9
60°	522.5	533.8	545.1	552.8	557.0	561.2	565.3	569.6
62.5°	500.3	512.3	524.3	532.4	536.2	540.2	544.1	548.1
65°	466.7	478.9	491.1	499.1	502.9	506.9	510.7	514.5
67.5°	432.5	444.8	457.3	465.4	469.5	473.5	477.6	481.6
70°	408.9	421.6	434.4	442.6	446.3	449.8	453.4	457.0
72.5°	385.9	398.4	411.0	419.4	423.7	428.0	432.3	436.6
75°	351.2	364.1	376.9	385.2	389.1	392.9	396.8	400.7
77.5°	317.4	330.1	342.8	351.3	355.5	359.6	363.9	368.0
80°	294.4	306.9	319.4	327.7	331.8	336.1	340.2	344.4
82.5°	273.0	285.4	297.9	306.2	310.1	314.0	317.9	321.8
85°	242.1	254.6	267.1	275.5	279.6	283.8	287.9	292.2
87.5°	217.6	229.8	242.1	250.1	254.0	257.8	261.7	265.5
90°	207.9	220.3	232.5	240.5	244.2	247.9	251.7	255.4
92.5°	198.5	210.4	222.3	230.0	233.7	237.3	241.0	244.7
95°	190.2	201.9	213.6	221.2	224.6	228.1	231.7	235.1
97.5°	182.3	193.6	204.9	212.3	215.9	219.5	223.1	226.7
100°	175.8	187.4	199.0	206.5	210.0	213.4	216.8	220.3
102.5°	168.7	180.3	191.8	199.2	202.8	206.2	209.7	213.2
105°	157.6	168.8	180.1	187.4	191.0	194.6	198.1	201.7
107.5°	150.6	159.8	169.0	175.3	178.8	182.4	186.0	189.6
110°	159.6	161.8	164.1	166.9	170.6	174.1	177.6	181.3



TEST NUMBER: P331378-840

CATALOG NUMBER: SA2XXDIP-C865D330U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	200.6	183.6	166.7	160.0	163.5	166.9	170.5	174.0
115°	232.6	207.8	183.2	170.0	167.9	166.0	164.1	162.1
117.5°	294.0	294.6	295.3	288.6	274.5	260.3	246.2	232.1
120°	320.7	329.9	339.1	340.5	334.0	327.5	320.9	314.4
122.5°	328.5	337.2	345.8	350.5	351.4	352.3	353.3	354.2
125°	338.6	347.1	355.7	361.4	364.3	367.2	370.1	372.9
127.5°	347.1	355.3	363.3	368.8	371.4	374.2	376.8	379.4
130°	352.6	360.5	368.5	373.7	376.0	378.3	380.6	382.8
132.5°	357.8	365.4	372.9	377.9	380.2	382.5	384.9	387.2
135°	365.4	372.3	379.3	384.0	386.2	388.4	390.6	392.8
137.5°	372.0	378.2	384.4	388.4	390.1	391.9	393.6	395.5
140°	376.6	382.0	387.5	390.8	392.3	393.7	395.2	396.6
142.5°	382.1	386.5	390.9	393.7	394.9	396.1	397.3	398.5
145°	390.8	393.1	395.5	397.2	398.3	399.4	400.5	401.6
147.5°	399.4	400.0	400.6	401.1	401.5	401.9	402.3	402.7
150°	406.1	406.5	407.0	407.0	406.7	406.3	405.9	405.6
152.5°	412.6	413.0	413.4	413.4	412.9	412.5	412.0	411.5
155°	421.4	421.8	422.3	422.2	421.6	421.1	420.5	419.9
157.5°	428.9	429.4	429.8	429.8	429.2	428.7	428.1	427.6
160°	433.2	433.6	434.0	434.0	433.5	433.0	432.5	432.0
162.5°	437.2	437.7	438.2	438.2	437.5	436.9	436.3	435.7
165°	442.1	442.6	443.1	443.1	442.6	442.1	441.6	441.1
167.5°	446.3	446.8	447.3	447.2	446.6	445.9	445.2	444.5
170°	448.4	448.9	449.4	449.3	448.7	448.0	447.4	446.7
172.5°	449.9	450.4	450.9	450.9	450.2	449.6	448.9	448.3
175°	451.6	452.1	452.6	452.5	451.8	451.1	450.3	449.6
177.5°	451.8	452.2	452.6	452.5	452.0	451.5	451.0	450.5
180°	451.2	451.2	451.2	451.2	451.2	451.2	451.2	451.2

(END OF REPORT)