

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: P331383-830

Luminaire Tested: **SA2XXDIP-C865D330U830-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331383-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,
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-F4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 330 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

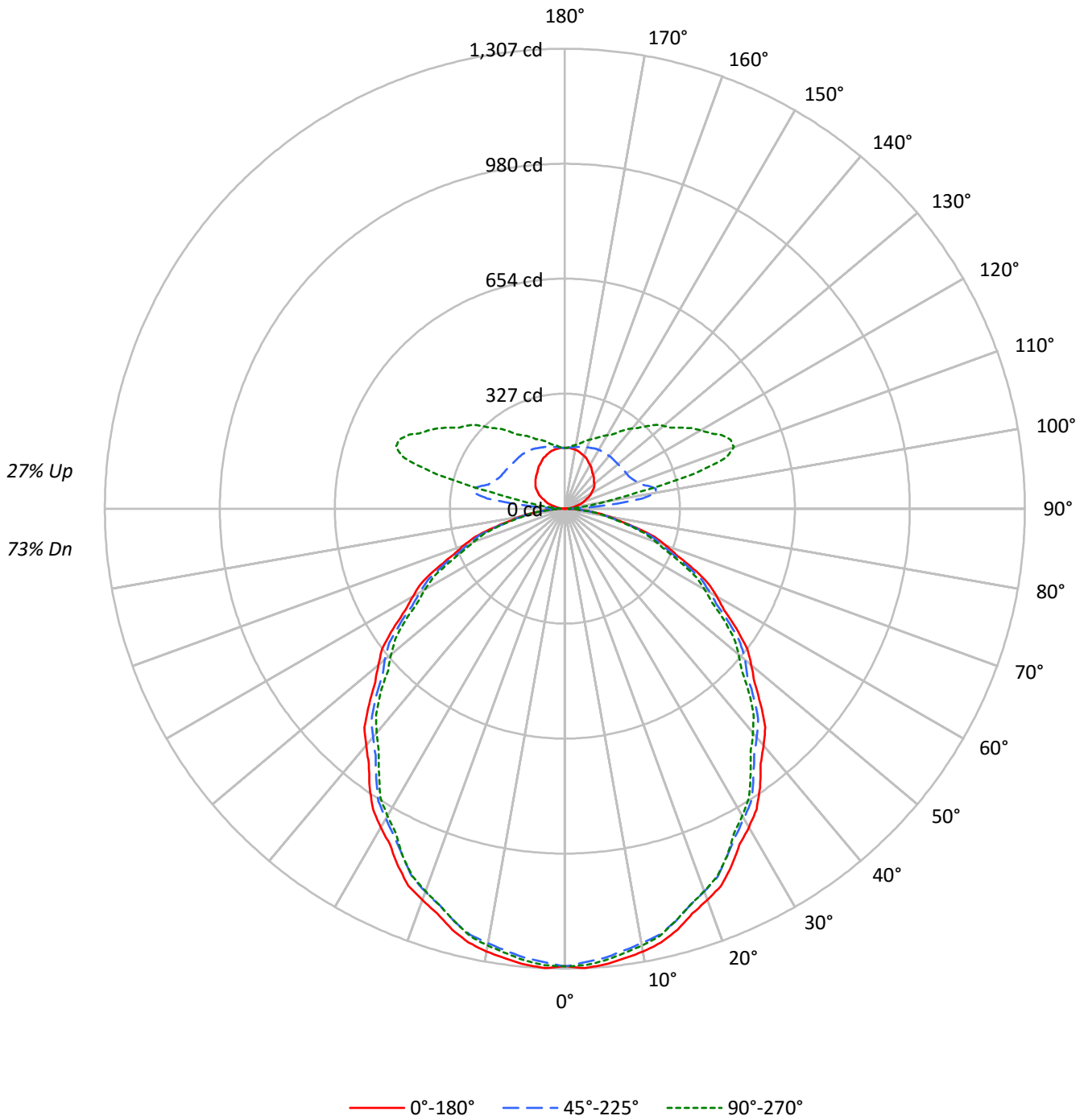
Lumens per Lamp: N/A
Luminaire Lumens: 4515.9 lumens
Efficiency: N/A
Efficacy: 103.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Direct

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



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Luminous Intensity Polar Plot





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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	113	113	113	113	107	107	107	107	96	96	96	87	87	87	78	78	78	73
1	103	99	94	91	98	94	90	87	85	82	79	76	74	72	69	67	66	62
2	94	86	80	74	89	82	76	71	74	70	66	67	63	60	60	58	55	52
3	86	76	68	62	81	72	65	60	65	60	55	59	55	51	54	50	47	44
4	78	67	59	53	74	64	57	51	58	52	47	53	48	44	48	44	41	38
5	72	60	52	45	68	57	50	44	52	46	41	48	42	38	43	39	35	33
6	67	54	46	39	63	52	44	38	47	41	36	43	38	34	39	35	31	29
7	62	49	41	35	58	47	39	34	43	36	32	39	34	30	36	31	28	25
8	57	45	36	31	54	43	35	30	39	33	28	36	31	27	33	28	25	23
9	54	41	33	28	51	39	32	27	36	30	26	33	28	24	30	26	23	21
10	50	38	30	25	48	36	29	24	33	27	23	31	26	22	28	24	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	21001	21001	21001
5°	21081	20778	20900
10°	20956	20566	20669
15°	20697	20301	20277
20°	20330	19900	19878
25°	19963	19408	19408
30°	19494	18957	18793
35°	19056	18413	18143
40°	18506	17873	17530
45°	17961	17335	16908
50°	17372	16777	16179
55°	16757	16124	15527
60°	16075	15345	14783
65°	15339	14571	13903
70°	14408	13638	12987
75°	13107	12558	12246
80°	11632	11278	10702
85°	9503	9040	8096



TEST NUMBER: P331383-830

CATALOG NUMBER: SA2XXDIP-C865D330U830-4F0-1E-UDD-F4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.3	2.7
10°-20°	344.2	7.6
20°-30°	505.9	11.2
30°-40°	587.6	13.0
40°-50°	587.0	13.0
50°-60°	511.9	11.3
60°-70°	378.5	8.4
70°-80°	214.4	4.7
80°-90°	59.2	1.3
90°-100°	69.2	1.5
100°-110°	235.0	5.2
110°-120°	249.6	5.5
120°-130°	205.5	4.6
130°-140°	165.0	3.7
140°-150°	124.7	2.8
150°-160°	87.6	1.9
160°-170°	51.6	1.1
170°-180°	16.8	0.4
0°-30°	972.3	21.5
0°-40°	1559.9	34.5
0°-60°	2658.7	58.9
0°-90°	3310.8	73.3
90°-120°	553.8	12.3
90°-150°	1049.0	23.2
90°-180°	1205.0	26.7
0°-180°	4515.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1301	1301	1301	1301	1301	
5°	1301	1295	1282	1291	1290	123
15°	1238	1230	1214	1219	1213	348
25°	1121	1110	1089	1092	1089	515
35°	967	954	934	927	920	603
45°	787	777	759	746	740	607
55°	595	587	573	558	552	532
65°	402	394	381	370	364	397
75°	210	207	201	194	196	224
85°	51	50	49	45	44	59
90°	0	4	11	11	11	3
95°	12	29	130	49	38	12
105°	41	61	247	441	375	43
115°	72	90	206	426	494	71
125°	100	118	198	345	401	89
135°	117	140	196	290	332	91
145°	134	154	195	242	265	84
155°	152	164	190	214	223	70
165°	166	171	182	192	196	47
175°	173	173	174	177	176	16
180°	173	173	173	173	173	



TEST NUMBER: P331383-830

CATALOG NUMBER: SA2XXDIP-C865D330U830-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7
2.5°	1306.7	1305.6	1304.5	1303.4	1302.3	1300.5	1298.1	1295.6	1293.2	1290.7	1293.0
5°	1300.7	1299.6	1298.5	1297.4	1296.3	1294.2	1291.2	1288.1	1285.1	1282.0	1284.2
7.5°	1289.2	1287.5	1285.8	1284.0	1282.3	1279.9	1276.8	1273.7	1270.5	1267.4	1269.7
10°	1278.2	1276.3	1274.3	1272.3	1270.5	1267.8	1264.4	1261.1	1257.8	1254.4	1256.7
12.5°	1263.2	1261.5	1259.8	1258.0	1256.3	1253.8	1250.5	1247.1	1243.8	1240.5	1242.0
15°	1238.2	1236.5	1234.8	1233.2	1231.5	1228.9	1225.3	1221.6	1218.0	1214.5	1215.5
17.5°	1206.2	1204.5	1202.9	1201.2	1199.5	1196.8	1193.2	1189.5	1185.8	1182.1	1183.5
20°	1183.2	1181.5	1179.9	1178.2	1176.5	1173.7	1169.8	1165.9	1162.1	1158.2	1159.0
22.5°	1160.2	1157.8	1155.5	1153.1	1150.8	1147.8	1144.2	1140.5	1136.8	1133.1	1133.3
25°	1120.6	1118.4	1116.2	1114.0	1111.7	1108.2	1103.5	1098.8	1094.1	1089.4	1090.0
27.5°	1075.6	1073.7	1071.6	1069.6	1067.6	1064.7	1061.0	1057.2	1053.6	1049.8	1049.0
30°	1045.6	1043.4	1041.1	1039.0	1036.7	1033.5	1029.4	1025.2	1021.0	1016.8	1016.0
32.5°	1013.6	1011.8	1010.0	1008.2	1006.4	1003.3	999.0	994.6	990.2	985.8	984.3
35°	966.8	964.0	961.2	958.5	955.6	952.1	947.6	943.2	938.7	934.2	932.6
37.5°	914.0	911.5	909.1	906.6	904.3	900.8	896.4	891.9	887.4	883.0	880.9
40°	878.0	875.8	873.5	871.3	869.1	865.7	861.3	856.9	852.4	848.0	845.5
42.5°	843.0	840.7	838.5	836.3	834.1	830.8	826.3	821.9	817.4	812.9	810.2
45°	786.6	784.8	782.8	780.9	778.9	775.8	771.7	767.5	763.4	759.2	756.1
47.5°	730.7	728.9	727.0	725.2	723.3	720.2	715.9	711.5	707.2	702.9	699.6
50°	691.6	690.2	688.9	687.5	686.1	683.4	679.6	675.6	671.8	667.9	664.0
52.5°	653.7	651.8	650.0	648.1	646.3	643.6	639.9	636.2	632.5	628.9	625.7
55°	595.3	593.7	592.0	590.3	588.6	586.2	582.9	579.5	576.2	572.8	569.5
57.5°	536.8	535.5	534.1	532.8	531.5	529.0	525.3	521.6	517.9	514.3	511.0
60°	497.8	496.6	495.6	494.5	493.3	490.9	486.9	483.1	479.2	475.2	472.2
62.5°	459.8	458.0	456.2	454.4	452.6	450.3	447.2	444.2	441.2	438.3	435.5
65°	401.5	399.8	398.1	396.4	394.8	392.6	389.8	387.0	384.3	381.4	379.0
67.5°	342.2	340.8	339.5	338.2	336.9	335.0	332.4	329.9	327.4	324.9	323.0
70°	305.2	304.1	302.9	301.8	300.8	298.9	296.4	293.9	291.4	288.9	287.0
72.5°	267.1	266.1	264.9	263.8	262.7	261.4	259.8	258.2	256.5	254.9	253.0
75°	210.1	209.5	209.0	208.5	207.9	206.9	205.6	204.2	202.7	201.3	199.7
77.5°	159.1	158.2	157.2	156.3	155.3	154.6	154.0	153.4	152.9	152.3	151.5
80°	125.1	124.8	124.5	124.2	123.9	123.6	123.0	122.4	121.9	121.3	120.5
82.5°	93.0	93.0	92.9	92.8	92.8	92.7	92.3	92.0	91.6	91.3	90.2
85°	51.3	51.0	50.7	50.4	50.1	49.9	49.6	49.3	49.0	48.8	48.0
87.5°	18.1	17.8	17.6	17.3	17.1	16.8	16.7	16.7	16.7	16.3	15.6
90°	0.4	1.3	2.6	3.3	4.0	5.0	6.7	9.0	11.0	11.3	11.0
92.5°	4.1	5.8	8.3	9.7	12.0	15.1	22.6	33.3	42.7	43.3	36.6
95°	11.7	13.0	16.3	19.3	24.6	32.6	48.0	76.9	115.6	130.5	114.2
97.5°	18.9	20.7	24.3	28.8	35.0	44.0	63.2	103.7	167.9	222.8	233.8
100°	25.6	26.7	29.6	35.0	41.7	51.0	68.6	109.2	181.2	263.1	311.0
102.5°	31.8	32.5	35.5	40.8	47.8	57.1	73.4	109.5	176.1	264.4	339.8
105°	40.6	41.9	44.3	49.3	56.6	66.0	81.6	111.2	166.2	246.8	335.4
107.5°	50.2	51.3	53.5	58.2	65.4	74.8	90.0	115.8	161.3	227.8	306.1
110°	56.6	58.0	59.9	64.3	71.3	81.0	95.6	119.5	160.2	218.8	287.8



TEST NUMBER: P331383-830

CATALOG NUMBER: SA2XXDIP-C865D330U830-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	62.5	63.8	66.1	70.1	76.8	86.8	100.9	123.6	160.4	212.9	274.9
115°	71.6	73.2	75.3	79.3	86.0	94.9	109.2	129.5	161.8	206.5	259.1
117.5°	81.1	82.4	84.4	87.9	94.3	103.7	116.9	135.9	164.3	203.3	249.1
120°	86.9	88.2	90.3	93.2	99.9	109.2	122.2	140.3	165.9	201.5	243.7
122.5°	92.6	93.6	95.6	98.9	105.5	115.1	127.2	143.9	167.7	200.4	239.2
125°	99.9	100.9	102.9	106.9	113.6	122.9	134.9	149.9	170.5	198.5	232.8
127.5°	105.8	107.1	109.9	114.3	120.6	130.3	141.9	155.4	173.3	197.4	226.8
130°	109.2	110.6	113.9	118.6	125.3	134.5	146.2	158.8	175.5	196.8	222.8
132.5°	112.4	114.0	117.6	122.5	129.5	138.8	150.0	162.3	177.7	196.5	219.6
135°	117.3	118.6	122.5	127.5	135.3	144.5	155.2	166.8	180.2	196.1	215.1
137.5°	121.8	123.4	127.3	132.7	140.3	148.9	159.5	170.3	182.5	196.0	212.0
140°	125.3	126.6	130.5	135.9	143.2	151.8	161.8	172.2	183.5	195.9	210.1
142.5°	128.7	129.8	133.5	138.8	145.9	154.0	163.7	173.8	184.3	195.9	208.3
145°	133.8	135.3	138.6	143.5	150.2	157.5	166.5	175.9	185.1	195.1	205.9
147.5°	139.5	140.4	143.6	148.3	153.8	160.3	168.8	177.0	185.4	194.0	203.3
150°	143.2	144.2	146.8	151.2	156.2	162.2	169.8	177.5	185.1	193.1	201.1
152.5°	146.9	147.4	150.1	153.8	158.6	164.0	170.9	177.8	184.6	191.8	199.3
155°	152.2	152.5	154.5	158.2	161.8	166.8	172.5	178.1	183.8	189.5	195.9
157.5°	156.6	156.9	158.5	161.7	164.7	168.8	173.6	178.1	182.3	187.1	192.6
160°	159.5	159.9	161.2	163.8	166.5	170.2	174.2	178.1	181.5	185.5	190.1
162.5°	162.5	162.2	163.6	165.7	168.1	171.0	174.5	177.9	180.7	184.2	188.0
165°	165.9	165.5	166.2	168.1	169.8	171.8	174.8	177.2	179.2	181.5	184.5
167.5°	168.6	168.2	168.8	170.1	171.4	172.6	174.7	176.7	177.7	179.2	181.1
170°	170.5	169.8	170.2	171.2	171.8	172.9	174.5	176.2	176.8	177.9	179.2
172.5°	171.5	171.2	171.0	172.0	172.4	173.1	174.3	175.4	175.8	176.3	177.3
175°	172.9	172.5	172.2	172.9	172.9	173.1	173.8	174.5	174.2	174.5	174.8
177.5°	173.4	172.9	172.7	173.1	173.1	173.1	173.4	174.0	173.4	173.1	173.4
180°	173.1	173.1	173.1	173.1	173.1	173.1	173.1	173.1	173.1	173.1	173.1



TEST NUMBER: P331383-830

CATALOG NUMBER: SA2XXDIP-C865D330U830-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7	1300.7
2.5°	1295.1	1297.4	1299.6	1300.5	1300.0	1299.6	1299.2	1298.7
5°	1286.4	1288.6	1290.9	1291.7	1291.2	1290.6	1290.1	1289.5
7.5°	1271.9	1274.1	1276.4	1277.1	1276.6	1275.9	1275.4	1274.7
10°	1258.9	1261.1	1263.4	1264.0	1263.2	1262.3	1261.5	1260.7
12.5°	1243.6	1245.1	1246.7	1247.2	1246.5	1245.9	1245.3	1244.7
15°	1216.6	1217.8	1218.9	1218.7	1217.4	1216.0	1214.6	1213.1
17.5°	1184.7	1186.0	1187.3	1187.2	1185.9	1184.6	1183.3	1181.9
20°	1159.8	1160.6	1161.5	1161.3	1160.3	1159.1	1158.0	1156.9
22.5°	1133.5	1133.6	1133.8	1133.6	1132.8	1132.2	1131.5	1130.9
25°	1090.5	1091.0	1091.6	1091.6	1091.0	1090.5	1090.0	1089.4
27.5°	1048.2	1047.4	1046.5	1045.5	1044.1	1042.7	1041.4	1040.1
30°	1015.1	1014.4	1013.5	1012.5	1011.4	1010.3	1009.2	1008.0
32.5°	982.8	981.3	979.8	978.5	977.4	976.3	975.2	974.0
35°	930.9	929.3	927.7	926.0	924.7	923.3	921.9	920.5
37.5°	878.9	876.8	874.8	873.1	871.8	870.4	869.1	867.7
40°	843.0	840.5	838.0	836.1	835.1	834.0	832.8	831.7
42.5°	807.5	804.7	802.1	799.9	798.3	796.8	795.2	793.7
45°	753.1	750.0	747.0	744.9	743.8	742.6	741.5	740.5
47.5°	696.4	693.2	690.0	687.6	686.0	684.4	682.8	681.2
50°	660.1	656.2	652.3	649.7	648.3	646.9	645.5	644.1
52.5°	622.4	619.2	616.0	613.4	611.6	609.7	607.9	606.1
55°	566.2	562.8	559.5	557.1	555.7	554.3	553.0	551.6
57.5°	507.7	504.4	501.1	499.0	497.9	496.9	495.9	494.7
60°	469.2	466.1	463.1	461.1	460.2	459.4	458.5	457.8
62.5°	432.5	429.7	426.9	425.0	423.9	422.8	421.8	420.8
65°	376.5	374.0	371.5	369.5	368.2	366.7	365.3	363.9
67.5°	321.0	319.1	317.2	315.7	314.5	313.4	312.3	311.1
70°	285.0	283.0	281.2	279.6	278.5	277.4	276.3	275.1
72.5°	251.0	249.0	247.1	245.7	244.8	243.9	243.0	242.1
75°	198.0	196.3	194.7	194.2	194.7	195.3	195.8	196.3
77.5°	150.7	149.9	149.0	148.2	147.4	146.7	145.9	145.1
80°	119.6	118.9	118.0	117.3	116.7	116.2	115.6	115.1
82.5°	89.2	88.1	87.1	86.5	86.3	86.2	86.1	86.1
85°	47.1	46.3	45.4	44.9	44.6	44.3	44.0	43.7
87.5°	14.8	14.0	13.5	13.1	12.9	12.6	12.4	12.2
90°	10.7	10.0	10.7	11.0	11.0	11.0	11.0	11.0
92.5°	29.0	24.9	22.1	20.1	19.8	18.8	18.9	18.5
95°	87.3	66.9	53.0	45.6	41.3	38.6	37.6	38.0
97.5°	203.6	166.5	130.5	106.5	90.6	82.4	77.6	74.7
100°	304.1	262.8	217.2	176.8	149.2	134.9	125.3	119.2
102.5°	369.9	360.5	327.2	284.5	254.4	230.0	217.9	209.8
105°	404.6	442.2	446.6	435.6	414.9	394.3	379.9	375.3
107.5°	379.6	436.3	470.9	487.0	489.7	488.5	485.6	479.5
110°	358.0	417.6	460.2	487.6	501.9	508.2	511.2	510.9



TEST NUMBER: P331383-830

CATALOG NUMBER: SA2XXDIP-C865D330U830-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	338.3	395.5	441.0	472.4	492.3	502.8	508.5	510.3
115°	314.1	365.3	409.0	443.3	466.9	482.2	490.9	493.9
117.5°	295.8	340.8	380.4	412.6	436.7	452.9	461.9	464.5
120°	286.7	328.0	363.4	393.6	417.0	432.6	442.2	445.6
122.5°	279.6	317.4	350.8	378.1	399.1	414.5	423.1	425.8
125°	269.1	303.4	332.7	357.7	377.0	389.6	397.9	400.7
127.5°	258.7	289.8	317.4	340.4	357.3	369.2	376.4	378.5
130°	252.1	280.8	307.1	329.0	345.3	356.7	363.4	366.0
132.5°	245.7	272.2	296.4	317.1	333.1	344.4	350.5	353.0
135°	236.8	258.7	280.8	299.4	313.7	324.7	330.7	332.1
137.5°	229.7	248.1	265.5	281.7	294.8	304.3	309.5	311.5
140°	225.1	241.1	256.5	271.1	281.7	290.4	295.4	297.4
142.5°	221.4	235.0	248.2	260.4	270.5	278.4	282.9	283.2
145°	216.1	227.2	237.4	247.1	255.1	260.8	264.1	265.0
147.5°	212.1	220.7	228.8	235.8	242.4	246.9	249.2	249.9
150°	209.2	216.5	223.5	229.4	234.4	238.5	240.4	240.8
152.5°	206.2	213.0	219.0	224.1	228.1	231.5	233.0	233.1
155°	202.2	207.5	212.4	216.1	219.8	222.2	223.5	222.8
157.5°	197.5	201.9	206.0	209.0	211.5	213.5	214.1	214.1
160°	194.4	198.1	201.8	204.2	206.5	208.1	208.5	208.5
162.5°	191.5	194.7	197.8	199.6	202.0	203.1	203.4	203.1
165°	187.2	189.5	191.8	193.1	194.4	195.9	195.9	195.5
167.5°	182.9	184.7	186.3	187.6	188.1	188.9	188.8	188.4
170°	180.9	181.8	183.1	183.8	184.2	185.1	184.8	184.2
172.5°	178.4	179.2	180.2	180.6	181.0	181.4	181.1	180.7
175°	175.9	176.2	176.5	176.8	176.8	177.2	176.8	176.2
177.5°	174.0	174.0	174.3	174.3	174.3	174.3	174.0	173.4
180°	173.1	173.1	173.1	173.1	173.1	173.1	173.1	173.1

(END OF REPORT)