

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: P331416-930

Luminaire Tested: **SA2XXDIP-C865D1080U930-4F0-1E-UDD-D4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331416-930
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-C865D1080U930-4F0-1E-UDD-D4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

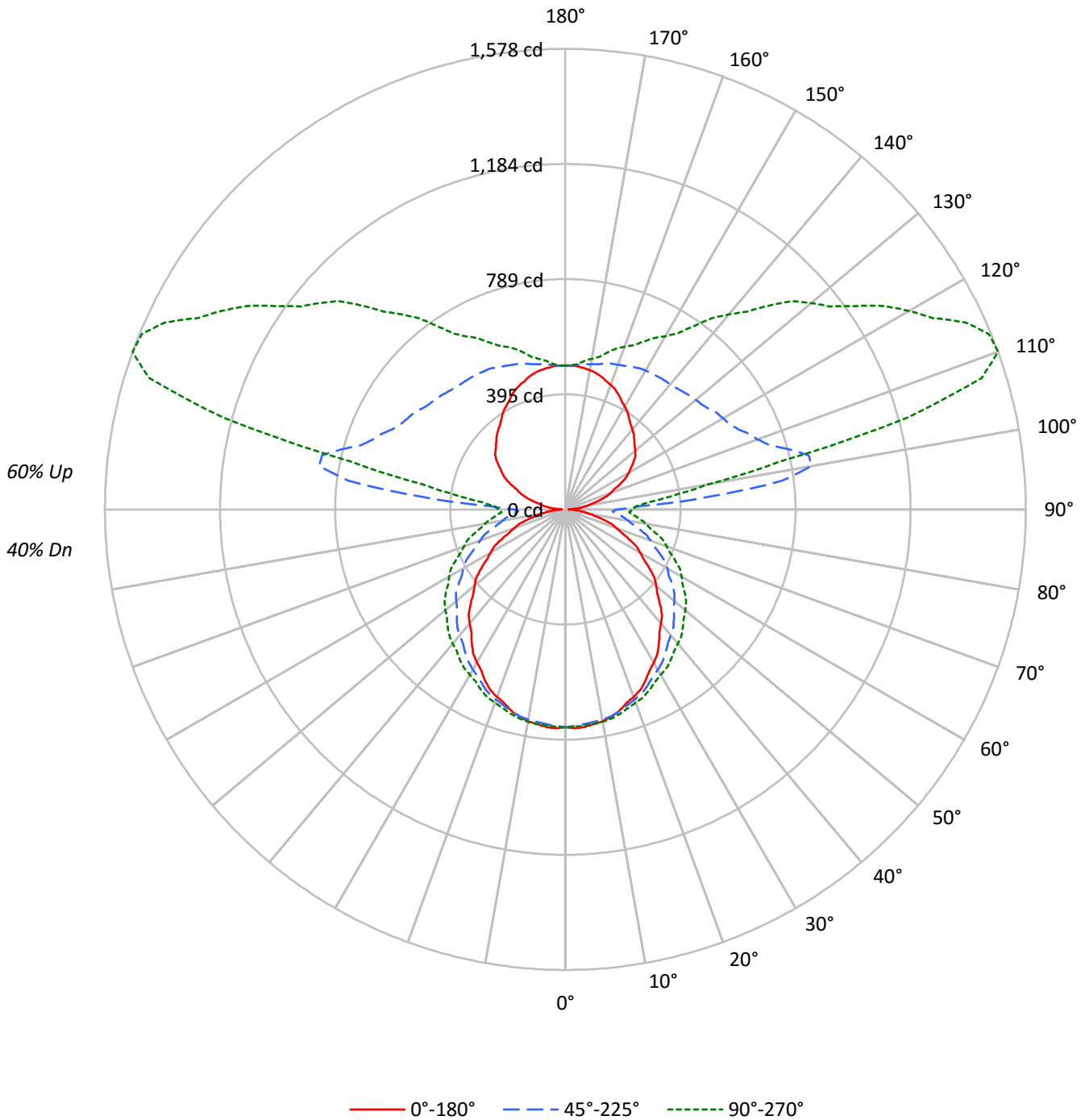
Lumens per Lamp: N/A
Luminaire Lumens: 6279.4 lumens
Efficiency: N/A
Efficacy: 96.0 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')
CIE Type: General Diffuse

Input Watts (W): 65.4
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: P331416-930
CATALOG NUMBER: SA2XXDIP-C865D1080U930-4F0-1E-UDD-D4

Luminous Intensity Polar Plot





TEST NUMBER: P331416-930

CATALOG NUMBER: SA2XXDIP-C865D1080U930-4F0-1E-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	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47	40
1	94	90	85	81	86	82	78	75	66	64	61	53	51	49	40	39	37	31
2	85	78	71	65	77	71	65	60	58	53	50	45	43	40	34	32	31	25
3	78	68	60	54	70	62	55	50	50	45	41	40	36	33	30	28	26	21
4	71	60	51	45	64	54	47	42	44	39	35	35	31	28	27	24	22	18
5	65	53	45	38	59	48	41	35	40	34	30	31	27	24	24	21	19	15
6	60	47	39	33	54	43	36	31	35	30	26	28	24	21	21	19	16	13
7	55	42	34	29	50	39	32	27	32	26	22	26	21	18	20	17	14	12
8	51	38	31	25	46	35	28	23	29	24	20	23	19	16	18	15	13	10
9	47	35	27	22	43	32	25	21	27	21	18	21	17	14	16	14	11	9
10	44	32	25	20	40	29	23	18	24	19	16	20	16	13	15	12	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12053	12053	12053
5°	12111	11602	11558
10°	12036	11258	11133
15°	11869	10896	10685
20°	11659	10507	10254
25°	11452	10132	9863
30°	11160	9747	9469
35°	10866	9375	9193
40°	10556	9059	8916
45°	10260	8774	8678
50°	9944	8519	8446
55°	9611	8242	8208
60°	9207	7957	7957
65°	8784	7620	7658
70°	8310	7260	7336
75°	7704	6907	7041
80°	6744	6545	6739
85°	5835	6234	6508



TEST NUMBER: P331416-930

CATALOG NUMBER: SA2XXDIP-C865D1080U930-4F0-1E-UDD-D4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.7	1.1
10°-20°	202.8	3.2
20°-30°	307.4	4.9
30°-40°	374.4	6.0
40°-50°	402.8	6.4
50°-60°	391.1	6.2
60°-70°	341.5	5.4
70°-80°	262.9	4.2
80°-90°	180.9	2.9
90°-100°	318.5	5.1
100°-110°	757.0	12.1
110°-120°	768.5	12.2
120°-130°	617.1	9.8
130°-140°	483.0	7.7
140°-150°	357.0	5.7
150°-160°	249.2	4.0
160°-170°	146.7	2.3
170°-180°	47.8	0.8
0°-30°	580.9	9.3
0°-40°	955.3	15.2
0°-60°	1749.2	27.9
0°-90°	2534.5	40.4
90°-120°	1844.0	29.4
90°-150°	3301.2	52.6
90°-180°	3745.0	59.6
0°-180°	6279.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	746	746	746	746	746	
5°	749	745	739	745	744	71
15°	714	716	716	725	725	201
25°	649	657	666	679	683	298
35°	559	578	598	621	630	349
45°	459	488	526	558	570	354
55°	352	392	447	484	500	314
65°	240	294	357	400	415	239
75°	133	194	263	308	324	141
85°	39	106	175	219	236	42
90°	12	87	175	215	230	9
95°	42	142	496	304	286	42
105°	121	212	795	1384	1210	129
115°	208	275	652	1308	1514	206
125°	286	340	601	1047	1215	255
135°	334	400	570	859	988	259
145°	381	438	555	695	766	239
155°	433	467	539	609	634	199
165°	472	486	516	547	556	133
175°	492	492	496	502	501	47
180°	492	492	492	492	492	



TEST NUMBER: P331416-930

CATALOG NUMBER: SA2XXDIP-C865D1080U930-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	746.5	746.5	746.5	746.5	746.5	746.5	746.5	746.5	746.5	746.5	746.5
2.5°	750.8	750.2	749.7	749.1	748.5	747.5	746.2	744.9	743.5	742.2	743.1
5°	748.6	748.0	747.2	746.5	745.8	744.7	743.2	741.8	740.4	738.9	740.4
7.5°	741.9	741.4	740.9	740.5	740.0	739.2	738.1	737.0	735.9	734.8	736.5
10°	736.8	736.3	735.8	735.3	734.8	734.3	733.5	732.8	732.1	731.3	733.3
12.5°	728.1	728.2	728.3	728.4	728.5	728.2	727.7	727.2	726.7	726.1	728.1
15°	714.0	714.5	715.0	715.5	715.9	716.2	716.2	716.2	716.2	716.2	718.4
17.5°	695.9	696.8	697.9	698.9	699.9	700.7	701.6	702.3	703.1	703.8	706.1
20°	683.7	684.9	686.2	687.4	688.5	689.7	690.6	691.5	692.5	693.5	696.1
22.5°	670.7	672.1	673.5	674.9	676.3	677.7	679.1	680.4	681.8	683.1	685.7
25°	649.1	650.8	652.5	654.2	655.8	657.8	659.9	662.1	664.2	666.4	669.3
27.5°	623.1	625.9	628.6	631.4	634.1	636.7	639.3	641.9	644.4	646.9	650.6
30°	605.8	608.9	612.1	615.2	618.3	621.5	624.6	627.7	630.9	634.0	637.8
32.5°	586.8	590.3	593.8	597.4	600.9	604.5	608.1	611.9	615.6	619.2	623.7
35°	559.3	563.4	567.5	571.6	575.7	580.0	584.6	589.1	593.7	598.3	603.6
37.5°	529.5	534.2	538.9	543.6	548.3	553.6	559.5	565.5	571.4	577.3	583.2
40°	509.6	514.9	520.2	525.5	530.7	536.6	543.1	549.6	556.1	562.6	568.8
42.5°	490.5	495.8	501.1	506.4	511.7	518.0	525.5	533.0	540.4	547.9	554.6
45°	458.7	465.2	471.7	478.2	484.7	492.1	500.5	509.0	517.4	525.8	533.2
47.5°	427.3	434.4	441.5	448.6	455.6	464.1	473.9	483.8	493.7	503.5	511.3
50°	405.7	413.1	420.6	428.0	435.5	444.7	455.4	466.3	477.1	488.0	496.1
52.5°	384.9	392.7	400.6	408.5	416.3	425.9	437.3	448.7	460.1	471.5	479.8
55°	351.6	360.3	368.9	377.6	386.2	396.8	409.3	421.8	434.3	446.8	455.4
57.5°	318.7	328.5	338.3	348.0	357.8	369.0	381.7	394.5	407.2	420.0	429.3
60°	295.4	305.7	316.0	326.4	336.7	348.7	362.4	376.1	389.8	403.6	412.7
62.5°	274.6	285.3	296.0	306.7	317.5	329.7	343.4	357.1	370.8	384.5	394.2
65°	240.2	251.9	263.7	275.5	287.3	300.3	314.5	328.6	342.8	357.0	366.9
67.5°	208.6	220.9	233.2	245.5	257.8	271.3	285.8	300.3	314.8	329.3	339.2
70°	186.1	198.6	211.1	223.6	236.1	249.8	264.7	279.6	294.5	309.4	319.8
72.5°	165.3	178.2	191.1	204.0	216.9	230.8	246.0	261.1	276.1	291.2	301.4
75°	133.1	146.5	160.0	173.5	186.9	201.4	216.7	232.1	247.5	262.9	273.2
77.5°	101.9	116.0	130.1	144.1	158.2	173.1	188.7	204.4	220.0	235.6	245.9
80°	81.1	95.8	110.5	125.1	139.8	154.9	170.6	186.2	201.8	217.4	227.6
82.5°	63.8	78.3	92.8	107.2	121.7	136.9	152.7	168.5	184.3	200.2	210.3
85°	39.0	53.9	68.7	83.6	98.6	113.7	129.1	144.5	159.9	175.3	185.4
87.5°	21.4	36.3	51.4	66.1	80.8	96.2	112.5	129.2	145.8	161.3	171.0
90°	11.7	28.5	46.3	62.1	77.9	95.5	115.6	137.6	158.7	175.0	183.7
92.5°	21.5	39.6	59.4	76.6	96.0	118.8	155.0	199.9	241.7	258.1	248.4
95°	41.8	56.9	77.7	97.5	123.9	159.6	217.5	314.4	438.6	495.7	458.4
97.5°	61.6	76.7	96.8	119.8	147.2	184.9	253.5	382.1	578.6	748.9	788.9
100°	80.5	92.2	109.7	133.7	161.5	199.3	262.9	391.9	609.9	856.4	1001.7
102.5°	97.1	107.3	123.9	147.2	175.0	212.1	271.7	387.3	589.9	854.1	1077.3
105°	121.0	131.8	145.3	166.5	194.3	230.6	287.6	384.3	553.2	794.8	1055.2
107.5°	148.0	156.6	168.6	187.3	213.5	249.0	304.2	389.6	530.8	732.2	962.9
110°	165.3	173.9	184.4	201.5	226.2	262.0	315.4	395.4	522.8	701.2	905.0



TEST NUMBER: P331416-930

CATALOG NUMBER: SA2XXDIP-C865D1080U930-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	182.0	189.8	200.3	215.9	239.0	274.9	326.3	401.9	518.0	678.5	862.5
115°	208.0	215.3	223.6	237.7	259.3	291.6	343.1	411.7	514.4	652.2	808.9
117.5°	233.7	239.3	246.7	258.4	278.4	310.8	358.5	422.7	513.1	634.4	771.6
120°	250.5	255.2	261.9	271.3	291.2	323.0	369.6	430.3	512.9	623.9	750.9
122.5°	266.4	269.8	275.8	285.5	304.8	336.8	380.5	436.9	513.6	615.6	732.6
125°	286.3	289.1	294.8	306.2	325.1	355.5	397.3	447.6	514.0	601.3	705.3
127.5°	303.0	306.6	314.2	326.5	344.5	374.7	414.0	458.5	515.8	590.3	680.0
130°	312.8	316.3	325.6	338.6	357.3	386.2	424.4	465.5	517.9	583.5	663.2
132.5°	321.9	326.2	336.2	350.0	369.4	397.8	433.3	472.5	519.9	577.6	648.7
135°	334.4	338.3	349.6	363.8	385.6	413.4	446.1	481.6	521.9	569.7	628.8
137.5°	347.3	351.9	363.1	378.3	399.8	424.9	455.9	487.9	523.4	563.3	612.9
140°	357.2	360.8	371.9	386.8	407.4	432.1	461.1	490.9	523.5	559.1	603.6
142.5°	367.0	369.8	380.2	395.1	415.0	438.0	465.8	494.5	524.5	557.3	595.8
145°	380.7	384.5	394.0	408.2	427.1	448.0	473.5	500.1	526.6	555.0	586.8
147.5°	396.6	399.5	408.5	421.7	437.4	455.9	480.0	503.3	527.3	551.6	578.3
150°	407.2	410.1	417.7	430.0	444.2	461.2	483.1	504.8	526.6	549.3	572.0
152.5°	417.8	419.2	426.7	437.6	451.0	466.5	486.1	505.6	525.1	545.5	566.7
155°	432.8	433.7	439.4	449.9	460.3	474.5	490.6	506.7	522.8	538.9	556.9
157.5°	445.3	446.3	450.9	459.9	468.2	480.2	493.8	506.7	518.4	532.1	547.6
160°	453.6	454.6	458.4	465.9	473.5	484.0	495.4	506.7	516.2	527.6	540.8
162.5°	462.0	461.5	465.2	471.2	478.1	486.2	496.1	506.0	513.9	523.7	534.8
165°	471.7	470.8	472.6	478.3	483.1	488.7	497.3	503.9	509.6	516.2	524.7
167.5°	479.6	478.5	480.2	483.8	487.2	490.8	497.0	502.6	505.2	509.6	514.9
170°	484.9	483.1	484.0	486.8	488.7	491.5	496.3	501.0	502.9	505.7	509.6
172.5°	488.0	486.8	486.2	489.1	490.2	492.3	495.5	498.7	499.9	501.2	504.3
175°	491.5	490.6	489.7	491.5	491.5	492.5	494.4	496.3	495.4	496.3	497.3
177.5°	493.3	491.7	491.0	492.5	492.5	492.5	493.3	494.8	493.3	492.5	493.3
180°	492.5	492.5	492.5	492.5	492.5	492.5	492.5	492.5	492.5	492.5	492.5



TEST NUMBER: P331416-930

CATALOG NUMBER: SA2XXDIP-C865D1080U930-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	746.5	746.5	746.5	746.5	746.5	746.5	746.5	746.5
2.5°	744.0	745.0	746.0	746.3	745.9	745.5	745.1	744.8
5°	741.8	743.2	744.7	745.3	745.0	744.8	744.5	744.3
7.5°	738.3	740.0	741.8	742.5	742.2	742.0	741.8	741.5
10°	735.2	737.1	739.1	739.9	739.6	739.4	739.2	738.9
12.5°	730.0	731.9	733.9	734.7	734.4	734.2	733.9	733.7
15°	720.5	722.7	724.9	725.8	725.5	725.3	725.0	724.9
17.5°	708.4	710.6	712.9	714.0	714.0	714.0	714.0	714.0
20°	698.8	701.4	704.0	705.4	705.4	705.4	705.4	705.4
22.5°	688.4	691.0	693.7	695.2	695.5	695.9	696.3	696.8
25°	672.2	675.1	678.0	679.8	680.4	681.2	681.9	682.7
27.5°	654.3	657.9	661.5	663.7	664.2	664.7	665.3	665.8
30°	641.6	645.5	649.4	651.7	652.3	653.1	653.8	654.5
32.5°	628.1	632.5	636.9	639.8	641.1	642.4	643.7	645.0
35°	608.9	614.2	619.5	622.9	624.6	626.3	627.9	629.7
37.5°	589.0	594.8	600.7	604.5	606.3	608.1	609.9	611.7
40°	575.0	581.3	587.6	591.7	593.9	596.1	598.3	600.5
42.5°	561.5	568.3	575.2	579.7	581.8	584.0	586.1	588.3
45°	540.7	548.1	555.6	560.5	563.0	565.3	567.8	570.1
47.5°	519.1	526.8	534.7	539.9	542.5	545.2	547.8	550.5
50°	504.3	512.4	520.7	526.0	528.6	531.3	533.9	536.6
52.5°	488.2	496.6	504.9	510.5	513.4	516.2	519.0	521.9
55°	464.1	472.8	481.4	487.3	490.4	493.6	496.7	499.8
57.5°	438.6	447.9	457.3	463.6	466.7	469.9	473.0	476.2
60°	421.8	431.0	440.1	446.3	449.7	453.1	456.4	459.8
62.5°	403.9	413.6	423.3	429.8	432.9	436.1	439.3	442.5
65°	376.7	386.6	396.5	402.9	406.0	409.2	412.3	415.4
67.5°	349.2	359.1	369.2	375.8	379.0	382.3	385.6	388.8
70°	330.1	340.4	350.7	357.3	360.3	363.1	366.1	368.9
72.5°	311.5	321.6	331.8	338.6	342.1	345.5	349.0	352.5
75°	283.6	293.9	304.3	311.0	314.1	317.2	320.3	323.5
77.5°	256.2	266.5	276.8	283.6	287.0	290.3	293.8	297.1
80°	237.7	247.8	257.9	264.6	267.9	271.3	274.7	278.0
82.5°	220.4	230.4	240.5	247.2	250.4	253.5	256.7	259.8
85°	195.4	205.5	215.6	222.4	225.8	229.1	232.4	235.9
87.5°	180.6	190.0	200.2	206.8	209.9	213.0	216.1	219.2
90°	192.3	200.1	211.6	218.7	221.7	224.5	227.5	230.3
92.5°	236.4	234.2	235.6	235.9	238.0	237.9	241.5	242.9
95°	390.9	342.2	311.5	296.7	287.3	282.6	282.7	286.5
97.5°	712.0	615.6	522.0	459.4	417.0	396.6	385.6	380.4
100°	990.7	882.2	761.2	652.5	576.5	538.4	513.6	499.2
102.5°	1171.4	1153.6	1067.4	951.6	868.9	802.0	770.3	749.8
105°	1260.6	1376.1	1396.8	1371.0	1315.0	1258.9	1220.8	1210.2
107.5°	1179.8	1349.1	1455.7	1506.9	1516.9	1516.4	1510.8	1495.9
110°	1112.5	1289.7	1418.6	1501.5	1544.8	1565.5	1576.6	1578.3



TEST NUMBER: P331416-930

CATALOG NUMBER: SA2XXDIP-C865D1080U930-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1050.4	1220.7	1358.0	1452.2	1511.5	1544.3	1563.0	1570.8
115°	972.5	1125.5	1256.8	1359.3	1429.2	1475.4	1502.7	1513.8
117.5°	911.5	1046.7	1166.3	1262.6	1333.6	1382.1	1410.5	1420.1
120°	879.8	1004.0	1111.1	1201.9	1270.9	1318.0	1348.2	1360.2
122.5°	853.7	967.8	1069.5	1151.8	1213.5	1259.5	1286.2	1296.4
125°	815.1	919.1	1008.9	1084.3	1141.3	1179.5	1205.3	1215.1
127.5°	776.8	871.1	955.6	1025.2	1075.2	1111.1	1133.7	1141.8
130°	752.3	839.5	920.1	986.5	1034.8	1068.9	1089.8	1099.3
132.5°	728.6	809.5	883.9	946.3	993.9	1028.0	1047.3	1056.1
135°	695.4	763.0	830.5	887.0	929.7	962.9	981.9	987.6
137.5°	667.6	724.3	778.4	827.6	866.3	894.9	911.5	918.8
140°	650.1	699.4	746.8	791.2	822.9	849.0	864.6	871.7
142.5°	636.3	677.9	718.5	755.5	785.6	809.2	823.1	825.5
145°	617.6	650.3	681.0	709.9	733.8	751.1	761.7	765.8
147.5°	603.5	628.4	651.4	671.9	691.2	704.7	711.7	714.0
150°	594.8	615.6	635.5	652.6	666.8	678.2	683.8	684.8
152.5°	586.4	605.8	622.6	637.4	648.6	658.4	662.6	662.8
155°	574.9	590.0	604.2	614.7	625.1	631.7	635.5	633.7
157.5°	561.4	574.1	586.0	594.2	601.6	607.1	608.8	608.8
160°	553.1	563.5	574.0	580.6	587.2	591.9	592.9	592.9
162.5°	544.8	553.7	562.6	567.7	574.3	577.6	578.5	577.7
165°	532.3	538.9	545.5	549.3	553.1	556.9	556.9	556.0
167.5°	520.3	525.5	530.0	533.5	535.1	537.2	537.0	535.9
170°	514.3	517.1	520.9	522.8	523.7	526.6	525.6	523.7
172.5°	507.4	509.6	512.6	513.7	514.7	516.0	515.0	513.9
175°	500.1	501.0	502.0	502.9	502.9	503.9	502.9	501.0
177.5°	494.8	494.8	495.5	495.5	495.5	495.5	494.8	493.3
180°	492.5	492.5	492.5	492.5	492.5	492.5	492.5	492.5

(END OF REPORT)