

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: P331738-930

Luminaire Tested: **SA2XXRDIP-C1005D330U930-4F0-1E-UDD-F**

Issue Date: 10/7/2019

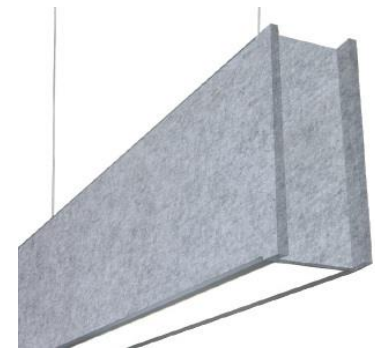
Test Information

Test Method: LM-79-08
Report Number: P331738-930
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-C1005D330U930-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1005 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: 3908.2 lumens
Efficiency: N/A
Efficacy: 78.5 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: Semi-Direct

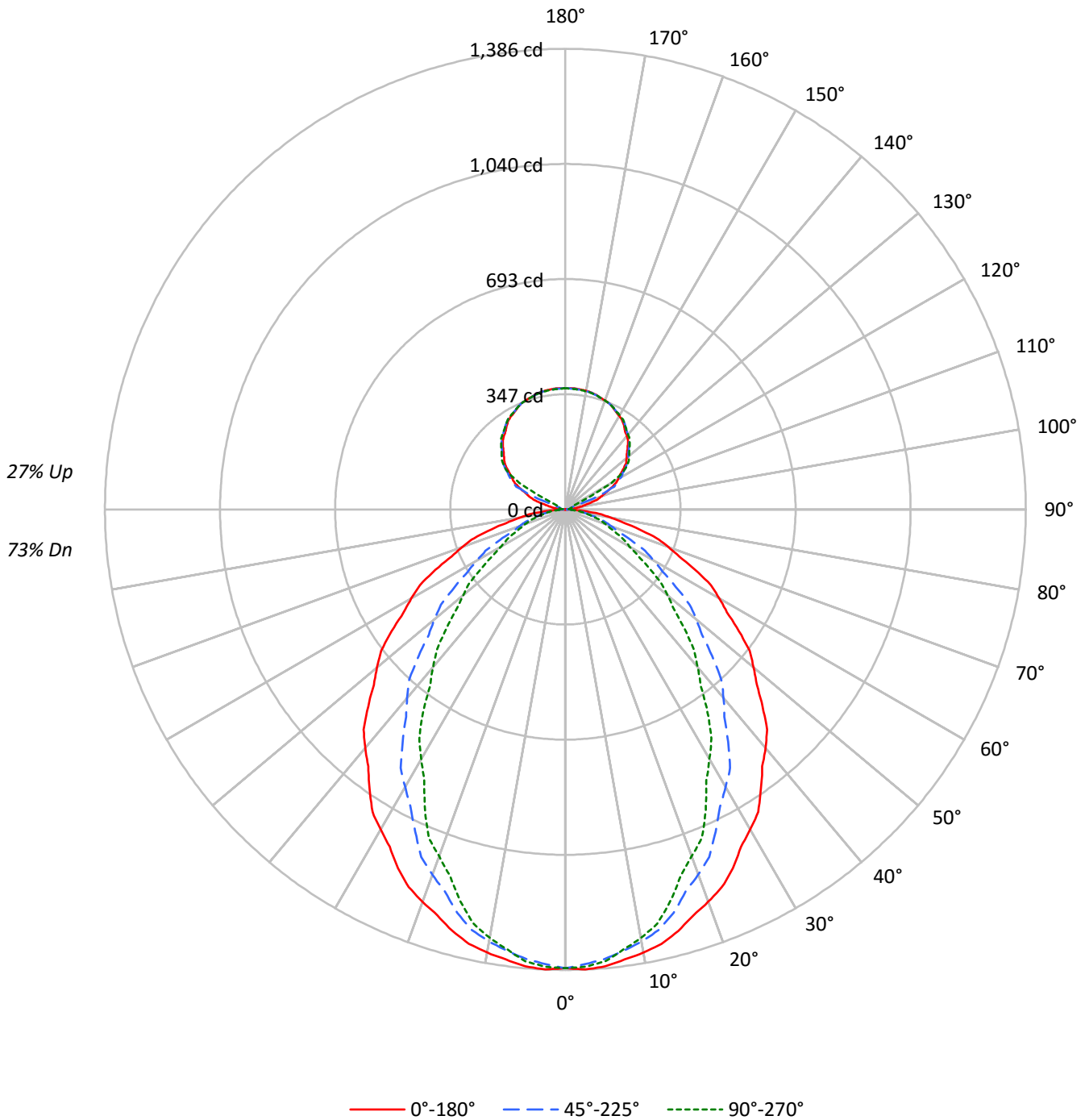
Input Watts (W): 49.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	113	113	113	113	107	107	107	107	96	96	96	86	86	86	77	77	77	77	77	77	73	
1	104	99	96	92	98	94	91	88	85	83	80	77	75	73	69	68	66	66	66	66	63	
2	95	88	82	77	90	83	78	74	76	71	68	68	65	62	62	59	57	57	57	57	54	
3	87	78	70	65	82	74	68	62	67	62	58	61	57	54	55	52	49	49	49	49	46	
4	80	69	61	55	76	66	59	54	60	55	50	55	50	47	50	46	43	43	43	43	40	
5	74	62	54	48	70	60	52	47	55	48	44	50	45	41	45	41	38	38	38	38	35	
6	68	56	48	42	65	54	47	41	49	43	39	45	40	36	41	37	34	34	34	34	31	
7	64	51	43	38	60	49	42	37	45	39	35	42	36	32	38	34	30	30	30	30	28	
8	59	47	39	34	56	45	38	33	41	35	31	38	33	29	35	31	28	28	28	28	25	
9	55	43	35	30	53	41	34	30	38	32	28	35	30	27	33	28	25	25	25	25	23	
10	52	40	32	28	49	38	31	27	35	30	26	33	28	24	30	26	23	23	23	23	21	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	22291	22291	22291
5°	22376	22013	22135
10°	22207	21653	21469
15°	21951	21010	20404
20°	21596	20094	19086
25°	21235	19053	17808
30°	20734	17984	16168
35°	20243	16821	14728
40°	19751	15616	13061
45°	19173	14266	11556
50°	18580	12901	10073
55°	17973	11431	8653
60°	17270	9884	7182
65°	16466	8306	6541
70°	15512	6845	6014
75°	14342	6238	5608
80°	12664	5579	5114
85°	9948	4390	4390



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	129.2	3.3
10°-20°	354.8	9.1
20°-30°	498.3	12.8
30°-40°	543.4	13.9
40°-50°	499.6	12.8
50°-60°	392.4	10.0
60°-70°	255.8	6.5
70°-80°	131.9	3.4
80°-90°	35.1	0.9
90°-100°	12.1	0.3
100°-110°	44.6	1.1
110°-120°	119.1	3.0
120°-130°	196.6	5.0
130°-140°	209.1	5.4
140°-150°	194.4	5.0
150°-160°	156.3	4.0
160°-170°	100.7	2.6
170°-180°	34.7	0.9
0°-30°	982.4	25.1
0°-40°	1525.7	39.0
0°-60°	2417.7	61.9
0°-90°	2840.6	72.7
90°-120°	175.8	4.5
90°-150°	776.0	19.9
90°-180°	1068.0	27.3
0°-180°	3908.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1381	1381	1381	1381	1381	
5°	1381	1374	1358	1369	1366	131
15°	1313	1298	1257	1234	1221	370
25°	1192	1150	1070	1020	1000	548
35°	1027	961	853	778	747	642
45°	840	753	625	539	506	648
55°	638	539	406	334	307	570
65°	431	329	217	177	171	427
75°	230	145	100	92	90	243
85°	54	29	24	24	24	63
90°	0	3	5	7	7	3
95°	17	9	10	12	11	21
105°	80	84	16	19	20	86
115°	152	156	163	46	22	149
125°	214	218	223	225	225	191
135°	265	269	272	274	274	205
145°	308	308	312	314	312	192
155°	339	337	340	341	339	156
165°	357	356	356	358	356	101
175°	365	363	364	365	363	35
180°	364	364	364	364	364	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6
2.5°	1385.7	1384.5	1383.4	1382.3	1381.2	1379.4	1377.0	1374.6	1372.1	1369.7	1371.9
5°	1380.6	1379.2	1377.9	1376.5	1375.1	1372.6	1369.0	1365.4	1361.8	1358.2	1360.7
7.5°	1366.4	1364.7	1363.0	1361.2	1359.5	1356.6	1352.3	1348.1	1343.9	1339.7	1340.4
10°	1354.5	1352.5	1350.5	1348.6	1346.6	1342.9	1337.3	1331.8	1326.2	1320.7	1319.9
12.5°	1339.5	1337.0	1334.6	1332.3	1329.9	1325.1	1318.0	1310.9	1303.8	1296.7	1295.2
15°	1313.2	1310.1	1307.1	1304.0	1301.0	1294.7	1285.3	1275.9	1266.4	1256.9	1251.7
17.5°	1280.9	1276.3	1271.6	1267.0	1262.3	1253.9	1241.8	1229.7	1217.6	1205.5	1199.2
20°	1256.9	1251.4	1245.9	1240.3	1234.8	1225.1	1211.1	1197.3	1183.4	1169.5	1162.5
22.5°	1230.9	1224.7	1218.5	1212.4	1206.1	1195.1	1179.5	1163.8	1148.2	1132.5	1123.6
25°	1192.0	1183.1	1174.2	1165.3	1156.4	1142.9	1124.5	1106.2	1087.9	1069.5	1058.2
27.5°	1145.0	1135.4	1125.7	1116.1	1106.4	1091.2	1070.6	1049.9	1029.2	1008.6	995.3
30°	1112.1	1101.5	1091.0	1080.4	1069.8	1053.4	1031.2	1009.0	986.8	964.6	950.4
32.5°	1080.0	1067.7	1055.4	1043.1	1030.7	1013.3	990.6	967.9	945.3	922.6	906.4
35°	1027.0	1012.9	998.7	984.6	970.5	951.1	926.7	902.3	877.8	853.4	835.9
37.5°	974.1	958.5	943.0	927.4	911.9	891.1	865.0	839.0	812.9	786.9	767.7
40°	937.1	920.5	903.8	887.1	870.5	848.6	821.7	794.8	767.8	740.9	721.2
42.5°	899.1	881.6	864.1	846.4	828.9	806.2	778.4	750.6	722.8	695.0	674.6
45°	839.7	821.0	802.4	783.8	765.2	741.4	712.2	683.1	653.9	624.8	605.0
47.5°	781.6	762.0	742.2	722.5	702.8	677.9	647.8	617.7	587.6	557.5	537.9
50°	739.7	720.0	700.3	680.5	660.8	635.7	605.2	574.6	544.0	513.6	494.4
52.5°	698.7	678.1	657.5	636.9	616.3	591.1	561.2	531.3	501.4	471.6	453.1
55°	638.5	616.9	595.2	573.5	551.9	526.0	496.0	466.0	436.1	406.1	389.4
57.5°	576.7	554.6	532.3	510.1	487.9	462.4	433.6	404.7	375.9	347.1	331.8
60°	534.8	512.6	490.3	468.1	445.9	420.5	391.9	363.3	334.7	306.1	292.0
62.5°	493.8	471.6	449.4	427.1	405.0	380.2	352.9	325.6	298.4	271.2	257.6
65°	431.0	408.5	386.1	363.6	341.1	317.4	292.4	267.4	242.4	217.4	208.0
67.5°	370.6	348.3	326.0	303.6	281.3	258.9	236.4	213.9	191.4	168.9	164.6
70°	328.6	307.0	285.3	263.7	242.0	221.6	202.4	183.3	164.1	145.0	142.2
72.5°	288.6	267.8	247.1	226.3	205.5	187.4	172.1	156.7	141.3	126.0	123.6
75°	229.9	210.4	191.0	171.6	152.1	137.7	128.2	118.9	109.4	100.0	98.0
77.5°	172.2	155.2	138.1	121.1	104.0	93.2	88.6	84.1	79.5	75.0	73.9
80°	136.2	122.1	107.9	93.7	79.6	71.1	68.3	65.6	62.8	60.0	58.9
82.5°	103.2	92.1	81.1	70.0	59.0	52.5	50.6	48.8	46.9	45.0	44.4
85°	53.7	47.9	42.1	36.2	30.4	27.1	26.3	25.4	24.5	23.7	23.7
87.5°	16.1	14.4	12.7	11.1	9.5	8.6	8.8	8.9	9.0	9.0	8.9
90°	0.2	0.9	1.5	2.2	2.9	3.4	3.8	4.3	4.8	5.3	5.5
92.5°	5.3	5.3	5.2	5.1	5.1	5.2	5.4	5.6	5.9	6.1	6.3
95°	17.1	15.2	13.3	11.3	9.4	8.6	9.0	9.5	9.9	10.3	10.6
97.5°	34.0	28.5	23.1	17.7	12.2	9.9	10.9	11.8	12.8	13.8	14.0
100°	46.6	38.6	30.6	22.6	14.6	11.0	12.1	13.0	14.0	15.0	15.5
102.5°	60.6	58.9	57.2	55.5	53.8	48.8	40.4	32.1	23.8	15.4	16.1
105°	80.1	81.9	83.6	85.4	87.2	80.1	64.1	48.1	32.0	16.1	16.7
107.5°	102.4	103.9	105.3	106.7	108.1	99.2	80.1	60.9	41.7	22.5	21.9
110°	116.8	118.0	119.3	120.5	121.7	113.8	96.9	80.0	63.0	46.1	40.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	130.3	131.3	132.5	133.5	134.6	133.1	128.9	124.7	120.5	116.3	95.0
115°	151.6	152.5	153.6	154.6	155.6	156.8	158.2	159.7	161.2	162.7	135.5
117.5°	170.6	171.7	172.8	174.0	175.0	176.1	177.2	178.1	179.1	180.2	173.6
120°	184.5	185.4	186.3	187.2	188.0	189.0	190.0	191.1	192.2	193.2	194.0
122.5°	196.3	197.3	198.2	199.1	200.1	201.1	202.2	203.3	204.6	205.7	206.1
125°	214.3	215.1	215.8	216.6	217.4	218.3	219.4	220.5	221.6	222.7	223.1
127.5°	230.6	231.5	232.3	233.2	234.0	234.8	235.6	236.5	237.3	238.1	238.7
130°	240.9	241.9	242.8	243.8	244.7	245.5	246.1	246.8	247.4	248.1	248.7
132.5°	251.5	252.3	253.1	253.9	254.7	255.4	256.0	256.7	257.3	258.0	258.5
135°	265.2	266.1	267.1	268.0	269.0	269.7	270.2	270.8	271.3	271.8	272.4
137.5°	279.1	279.7	280.4	281.0	281.7	282.3	282.9	283.5	284.1	284.7	285.3
140°	288.1	288.6	289.0	289.5	290.0	290.6	291.2	291.9	292.5	293.1	293.7
142.5°	295.7	296.1	296.5	297.0	297.4	298.0	298.7	299.5	300.2	300.9	301.4
145°	307.6	307.6	307.5	307.4	307.4	307.9	308.8	309.9	310.9	311.9	312.3
147.5°	318.0	317.8	317.6	317.3	317.2	317.5	318.5	319.5	320.5	321.5	321.7
150°	324.7	324.3	323.9	323.5	323.1	323.4	324.3	325.3	326.2	327.2	327.5
152.5°	330.4	330.0	329.5	329.1	328.6	328.8	329.7	330.6	331.5	332.4	332.7
155°	338.8	338.2	337.7	337.1	336.6	336.7	337.5	338.1	338.8	339.5	339.9
157.5°	345.2	344.8	344.3	343.9	343.4	343.5	344.0	344.5	345.0	345.4	345.8
160°	349.0	348.7	348.3	348.0	347.6	347.6	348.0	348.3	348.7	349.0	349.4
162.5°	352.4	352.0	351.7	351.3	351.0	351.0	351.2	351.6	351.9	352.2	352.6
165°	356.9	356.6	356.2	355.9	355.6	355.5	355.6	355.8	356.0	356.1	356.5
167.5°	360.3	360.0	359.6	359.2	358.9	358.8	359.0	359.1	359.3	359.5	359.9
170°	362.2	361.8	361.5	361.2	360.8	360.7	360.8	360.9	361.0	361.2	361.6
172.5°	363.5	363.1	362.7	362.4	362.1	361.9	362.1	362.2	362.3	362.4	362.8
175°	365.1	364.7	364.3	363.9	363.5	363.3	363.5	363.5	363.7	363.8	364.2
177.5°	365.3	365.0	364.7	364.4	364.0	363.9	363.9	364.0	364.0	364.1	364.4
180°	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6
2.5°	1374.1	1376.3	1378.6	1379.4	1379.0	1378.6	1378.1	1377.7
5°	1363.2	1365.7	1368.2	1369.0	1368.2	1367.3	1366.5	1365.7
7.5°	1341.1	1341.8	1342.6	1342.2	1340.8	1339.3	1337.9	1336.4
10°	1319.0	1318.2	1317.4	1316.1	1314.4	1312.8	1311.1	1309.5
12.5°	1293.7	1292.2	1290.7	1288.6	1285.8	1283.0	1280.3	1277.5
15°	1246.4	1241.1	1235.8	1231.8	1229.1	1226.3	1223.5	1220.7
17.5°	1192.9	1186.7	1180.4	1174.8	1170.1	1165.3	1160.5	1155.8
20°	1155.6	1148.7	1141.7	1135.2	1129.1	1123.0	1116.9	1110.8
22.5°	1114.7	1105.7	1096.7	1090.0	1085.5	1080.9	1076.4	1071.8
25°	1046.8	1035.4	1024.0	1016.3	1012.0	1007.9	1003.7	999.6
27.5°	982.0	968.7	955.4	945.5	938.9	932.3	925.7	919.1
30°	936.3	922.1	907.9	897.2	889.7	882.2	874.7	867.2
32.5°	890.3	874.2	857.9	846.4	839.4	832.3	825.2	818.2
35°	818.4	801.0	783.4	771.6	765.5	759.4	753.3	747.2
37.5°	748.4	729.1	709.8	696.7	689.7	682.7	675.7	668.7
40°	701.5	681.8	662.1	648.7	641.4	634.1	627.0	619.7
42.5°	654.2	633.8	613.4	599.7	592.7	585.7	578.8	571.8
45°	585.3	565.6	545.8	532.7	526.0	519.3	512.7	506.1
47.5°	518.3	498.7	479.1	466.3	460.2	454.2	448.1	442.1
50°	475.2	456.1	436.9	424.4	418.6	412.7	406.9	401.0
52.5°	434.6	416.0	397.6	385.6	380.3	374.9	369.5	364.1
55°	372.8	356.1	339.4	328.5	323.2	317.9	312.7	307.4
57.5°	316.6	301.3	286.0	276.1	271.7	267.3	262.9	258.4
60°	277.8	263.7	249.5	240.2	235.7	231.3	226.8	222.4
62.5°	244.2	230.6	217.2	209.0	206.4	203.7	201.1	198.4
65°	198.5	189.1	179.6	174.5	173.7	172.8	172.0	171.2
67.5°	160.3	156.0	151.6	149.0	148.1	147.2	146.3	145.4
70°	139.4	136.6	133.9	131.9	130.8	129.6	128.6	127.4
72.5°	121.3	119.0	116.6	115.1	114.5	113.8	113.1	112.4
75°	96.0	94.2	92.2	91.1	90.8	90.5	90.3	89.9
77.5°	72.7	71.7	70.5	69.7	69.3	68.9	68.4	68.0
80°	57.7	56.7	55.5	55.0	55.0	55.0	55.0	55.0
82.5°	43.6	43.0	42.3	42.0	42.0	42.0	42.0	42.0
85°	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
87.5°	8.7	8.6	8.4	8.3	8.3	8.4	8.4	8.4
90°	5.9	6.1	6.4	6.7	6.8	6.8	7.0	7.1
92.5°	6.4	6.6	6.7	6.8	6.9	7.0	7.0	7.1
95°	10.8	11.2	11.4	11.6	11.5	11.4	11.4	11.3
97.5°	14.3	14.4	14.7	14.8	14.9	15.0	15.1	15.2
100°	16.0	16.5	16.9	17.2	17.3	17.4	17.5	17.7
102.5°	16.6	17.3	17.9	18.3	18.4	18.6	18.8	18.9
105°	17.4	18.0	18.7	19.1	19.3	19.6	19.8	20.1
107.5°	21.2	20.5	19.9	19.6	19.9	20.1	20.4	20.6
110°	34.4	28.5	22.7	19.9	20.1	20.4	20.6	20.8



TEST NUMBER: P331738-930

CATALOG NUMBER: SA2XXRDIP-C1005D330U930-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	73.6	52.3	30.9	20.3	20.5	20.6	20.9	21.0
115°	108.4	81.3	54.1	38.5	34.2	30.1	25.8	21.6
117.5°	167.1	160.5	153.9	143.7	129.9	116.0	102.2	88.3
120°	194.6	195.3	196.0	192.4	184.5	176.6	168.7	160.8
122.5°	206.5	206.9	207.3	206.8	205.3	203.7	202.2	200.6
125°	223.6	224.0	224.4	224.7	224.9	225.0	225.2	225.3
127.5°	239.4	239.9	240.5	240.8	240.9	240.9	240.9	241.0
130°	249.3	250.0	250.6	250.9	250.9	250.8	250.8	250.7
132.5°	259.1	259.6	260.2	260.4	260.3	260.3	260.2	260.2
135°	273.0	273.5	274.1	274.3	274.3	274.1	274.0	273.9
137.5°	285.8	286.4	287.0	287.1	287.0	286.8	286.6	286.4
140°	294.2	294.7	295.2	295.4	295.1	294.8	294.5	294.2
142.5°	301.9	302.4	302.9	303.0	302.6	302.4	302.1	301.7
145°	312.7	313.1	313.5	313.6	313.2	313.0	312.7	312.3
147.5°	322.0	322.4	322.7	322.7	322.5	322.2	322.0	321.7
150°	327.8	328.2	328.6	328.6	328.3	328.0	327.7	327.4
152.5°	333.1	333.5	333.8	333.8	333.4	333.0	332.6	332.2
155°	340.2	340.6	341.0	340.9	340.4	340.0	339.5	339.0
157.5°	346.3	346.7	347.0	347.0	346.5	346.1	345.6	345.2
160°	349.8	350.1	350.4	350.4	350.0	349.6	349.2	348.8
162.5°	352.9	353.4	353.8	353.8	353.2	352.7	352.2	351.7
165°	356.9	357.3	357.8	357.8	357.3	356.9	356.5	356.1
167.5°	360.3	360.7	361.1	361.0	360.5	360.0	359.5	358.9
170°	362.0	362.4	362.8	362.7	362.2	361.7	361.2	360.6
172.5°	363.2	363.6	364.0	364.0	363.5	363.0	362.4	361.9
175°	364.6	365.0	365.4	365.3	364.8	364.2	363.5	363.0
177.5°	364.8	365.1	365.4	365.3	364.9	364.5	364.1	363.7
180°	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3

(END OF REPORT)