

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: P332214-930

Luminaire Tested: **S123DIW-S1165D460U930-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332214-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S1165D460U930-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5383.2 lumens
Efficiency: N/A
Efficacy: 102.7 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Direct

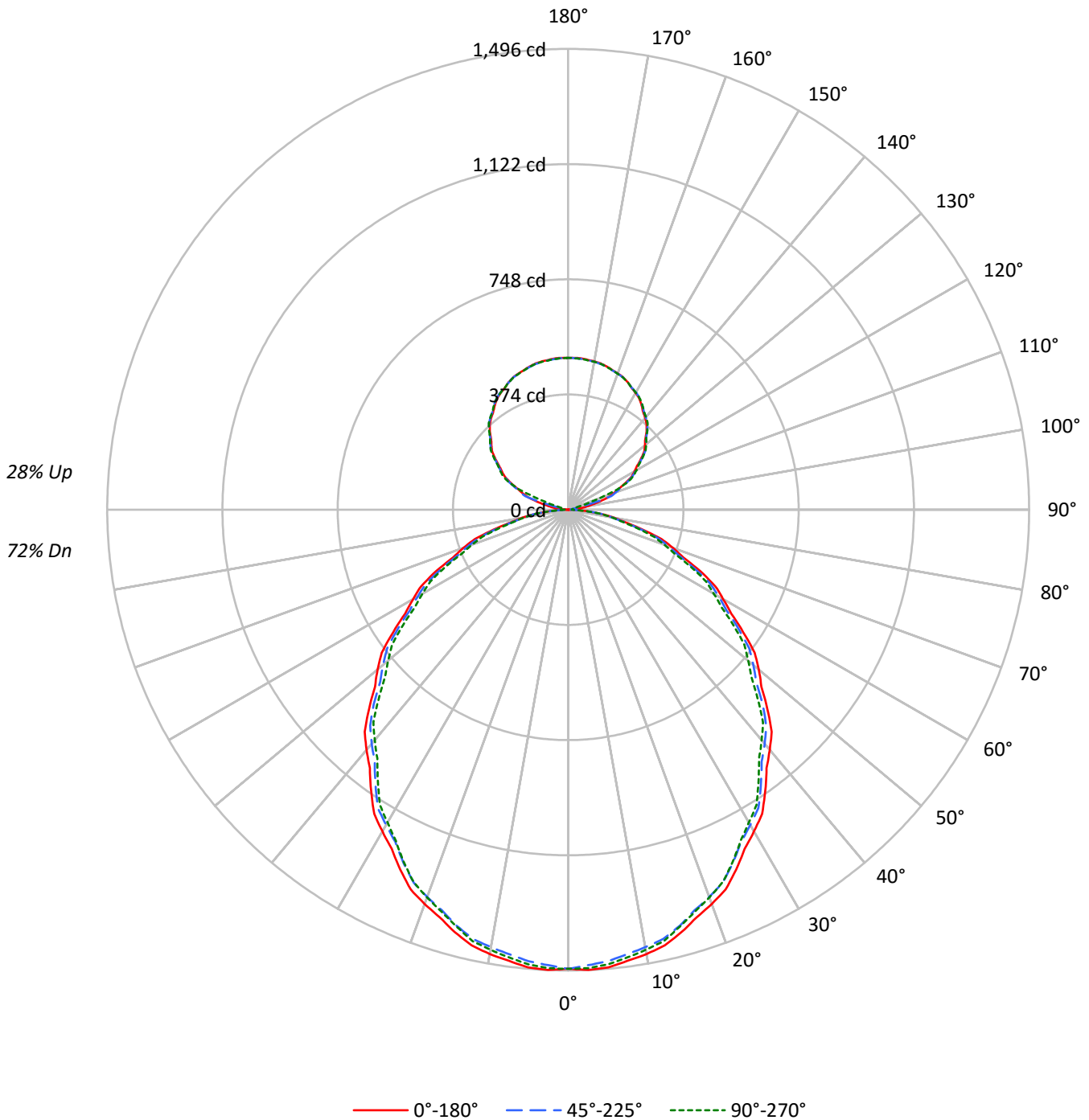
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	112	112	112	107	107	107	107	96	96	96	86	86	86	76	76	76	72
1	103	98	94	90	97	93	90	86	84	81	79	75	73	71	67	66	64	61
2	93	86	79	74	88	81	76	71	73	69	65	66	63	59	59	57	54	51
3	85	75	68	62	80	72	65	59	65	59	55	58	54	50	53	49	46	43
4	78	67	58	52	74	64	56	50	58	52	47	52	47	43	47	43	40	37
5	72	60	51	45	68	57	49	43	52	45	40	47	42	37	42	38	35	32
6	66	54	45	39	63	51	43	38	47	40	35	42	37	33	38	34	30	28
7	61	49	40	34	58	46	39	33	42	36	31	39	33	29	35	31	27	25
8	57	44	36	31	54	42	35	30	39	32	28	35	30	26	32	28	24	22
9	53	40	33	27	50	39	32	27	36	29	25	33	27	24	30	25	22	20
10	50	37	30	25	47	36	29	24	33	27	23	30	25	21	28	23	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	16043	16043	16043
5°	16119	15896	16008
10°	16010	15759	15856
15°	15824	15581	15610
20°	15605	15326	15340
25°	15311	15023	14992
30°	14989	14686	14574
35°	14651	14331	14146
40°	14299	13939	13722
45°	13910	13577	13247
50°	13520	13134	12769
55°	13011	12675	12288
60°	12499	12140	11752
65°	12045	11556	11196
70°	11374	10889	10408
75°	10393	10019	9590
80°	9372	8976	8901
85°	8225	7916	7608



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	140.4	2.6
10°-20°	396.4	7.4
20°-30°	585.6	10.9
30°-40°	684.0	12.7
40°-50°	687.7	12.8
50°-60°	604.1	11.2
60°-70°	450.0	8.4
70°-80°	256.4	4.8
80°-90°	75.0	1.4
90°-100°	17.9	0.3
100°-110°	85.4	1.6
110°-120°	205.2	3.8
120°-130°	261.3	4.9
130°-140°	279.2	5.2
140°-150°	261.1	4.8
150°-160°	210.6	3.9
160°-170°	135.9	2.5
170°-180°	46.8	0.9
0°-30°	1122.4	20.9
0°-40°	1806.5	33.6
0°-60°	3098.3	57.6
0°-90°	3879.7	72.1
90°-120°	308.6	5.7
90°-150°	1110.2	20.6
90°-180°	1504.0	27.9
0°-180°	5383.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1490	1490	1490	1490	1490	
5°	1492	1485	1471	1483	1482	141
15°	1420	1414	1398	1407	1401	400
25°	1289	1281	1265	1266	1262	594
35°	1115	1107	1091	1083	1076	697
45°	914	908	892	877	870	705
55°	693	691	675	662	655	621
65°	473	466	454	444	440	466
75°	250	245	241	235	231	267
85°	67	64	64	62	62	73
90°	0	4	9	10	11	5
95°	22	8	11	14	14	28
105°	109	111	80	19	16	116
115°	205	207	210	214	215	202
125°	289	291	293	294	294	258
135°	359	362	363	364	363	277
145°	415	417	418	419	419	259
155°	457	456	456	458	456	210
165°	482	481	480	483	481	136
175°	493	491	492	494	491	47
180°	493	493	493	493	493	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4
2.5°	1495.6	1494.7	1493.8	1492.9	1491.9	1490.2	1487.8	1485.2	1482.7	1480.2	1482.5
5°	1491.8	1490.4	1488.9	1487.5	1486.0	1483.8	1480.7	1477.5	1474.4	1471.2	1474.1
7.5°	1477.2	1475.7	1474.3	1472.8	1471.5	1469.1	1465.8	1462.6	1459.4	1456.1	1458.7
10°	1464.8	1463.4	1462.0	1460.5	1459.1	1456.6	1452.9	1449.2	1445.4	1441.8	1444.3
12.5°	1448.5	1447.2	1446.0	1444.9	1443.7	1441.3	1437.9	1434.4	1430.9	1427.4	1429.3
15°	1420.0	1418.9	1417.7	1416.6	1415.4	1413.0	1409.3	1405.6	1401.9	1398.2	1400.4
17.5°	1386.9	1385.4	1384.0	1382.5	1381.0	1378.4	1374.7	1371.0	1367.3	1363.6	1365.2
20°	1362.3	1360.6	1358.9	1357.1	1355.5	1352.7	1349.1	1345.4	1341.7	1338.0	1339.1
22.5°	1334.6	1332.9	1331.2	1329.5	1327.8	1325.1	1321.4	1317.7	1314.0	1310.3	1311.2
25°	1289.2	1287.5	1285.8	1284.1	1282.5	1279.7	1276.0	1272.4	1268.6	1264.9	1265.2
27.5°	1240.8	1239.2	1237.5	1235.8	1234.2	1231.4	1227.4	1223.4	1219.4	1215.4	1215.7
30°	1206.0	1204.5	1203.1	1201.7	1200.3	1197.6	1193.6	1189.6	1185.6	1181.6	1181.6
32.5°	1171.1	1169.2	1167.3	1165.5	1163.6	1161.1	1158.1	1155.0	1151.9	1148.8	1147.2
35°	1115.0	1113.3	1111.6	1109.9	1108.2	1105.5	1101.7	1098.0	1094.3	1090.6	1088.9
37.5°	1057.5	1055.4	1053.2	1051.1	1048.9	1045.9	1042.2	1038.4	1034.7	1030.9	1028.8
40°	1017.6	1015.9	1014.2	1012.4	1010.7	1007.9	1003.9	999.9	995.9	992.0	989.7
42.5°	977.5	975.7	973.7	971.8	969.8	966.9	962.9	958.9	954.9	951.0	948.7
45°	913.8	912.6	911.5	910.4	909.2	906.8	903.1	899.4	895.7	891.9	888.6
47.5°	850.4	848.8	847.2	845.5	843.8	841.3	837.8	834.3	830.9	827.4	824.0
50°	807.4	806.0	804.5	803.2	801.7	799.2	795.4	791.7	788.0	784.3	781.2
52.5°	762.3	761.3	760.3	759.4	758.4	755.9	752.0	748.1	744.2	740.2	737.5
55°	693.3	693.1	692.8	692.5	692.2	690.2	686.5	682.8	679.1	675.4	672.3
57.5°	627.7	626.7	625.7	624.8	623.9	621.9	618.9	616.0	613.0	610.0	607.2
60°	580.6	580.2	580.0	579.7	579.4	577.6	574.1	570.7	567.3	563.9	561.3
62.5°	538.5	537.8	537.0	536.3	535.6	533.5	530.0	526.6	523.3	519.8	517.2
65°	472.9	471.5	470.0	468.6	467.2	465.0	462.2	459.3	456.5	453.7	451.4
67.5°	403.4	402.2	401.0	399.7	398.4	396.7	394.5	392.4	390.2	388.1	386.0
70°	361.4	359.7	358.0	356.3	354.6	352.9	351.1	349.4	347.7	346.0	344.1
72.5°	317.3	316.1	314.8	313.6	312.3	310.7	308.8	306.8	304.9	303.0	301.2
75°	249.9	248.7	247.6	246.5	245.3	244.3	243.5	242.6	241.8	240.9	239.5
77.5°	190.2	189.6	188.9	188.3	187.7	186.9	185.8	184.8	183.8	182.8	181.8
80°	151.2	150.3	149.5	148.6	147.8	147.1	146.5	145.9	145.4	144.8	144.6
82.5°	113.3	113.1	112.9	112.8	112.6	112.4	112.3	112.3	112.1	112.0	111.5
85°	66.6	66.0	65.5	64.9	64.3	64.1	64.1	64.1	64.1	64.1	63.5
87.5°	26.7	26.2	25.7	25.2	24.6	24.4	24.4	24.4	24.3	24.3	24.1
90°	0.3	1.1	2.0	2.8	3.6	4.6	5.6	6.7	7.7	8.8	9.1
92.5°	6.8	6.6	6.4	6.1	5.9	6.2	7.0	7.7	8.6	9.4	9.9
95°	22.3	19.0	15.7	12.3	9.0	7.7	8.6	9.5	10.4	11.3	11.9
97.5°	44.9	43.4	41.9	40.4	38.9	35.2	29.4	23.5	17.7	11.8	12.5
100°	61.9	63.5	65.1	66.8	68.4	62.9	50.2	37.5	24.8	12.1	12.7
102.5°	81.2	82.4	83.6	84.8	85.9	79.6	65.7	51.9	38.0	24.1	22.1
105°	109.2	110.1	111.0	111.9	112.8	109.5	102.2	94.9	87.6	80.2	65.8
107.5°	138.6	139.3	140.1	140.7	141.5	142.4	143.6	144.7	145.9	147.0	136.5
110°	158.2	158.9	159.6	160.2	160.9	161.6	162.5	163.4	164.3	165.2	162.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	177.0	177.6	178.1	178.7	179.4	180.1	181.0	181.9	182.8	183.7	183.7
115°	204.7	205.2	205.7	206.2	206.7	207.3	208.1	208.8	209.5	210.3	211.1
117.5°	231.6	232.3	232.8	233.4	234.1	234.6	234.9	235.3	235.7	236.0	236.7
120°	248.3	249.1	249.8	250.5	251.3	251.8	252.0	252.3	252.5	252.7	253.4
122.5°	265.4	266.0	266.5	267.2	267.7	268.2	268.6	268.8	269.1	269.5	269.9
125°	288.6	289.3	289.9	290.6	291.2	291.7	292.0	292.4	292.7	293.0	293.2
127.5°	311.2	311.9	312.5	313.2	313.8	314.3	314.7	315.1	315.5	315.9	316.2
130°	325.3	326.0	326.6	327.3	327.9	328.4	328.7	329.1	329.4	329.6	330.0
132.5°	338.8	339.4	340.1	340.7	341.4	341.8	342.1	342.3	342.6	342.8	343.2
135°	359.3	359.8	360.3	360.8	361.3	361.7	362.0	362.3	362.6	363.0	363.2
137.5°	376.9	377.6	378.1	378.8	379.4	379.8	380.0	380.2	380.3	380.5	380.9
140°	388.7	389.1	389.6	390.1	390.6	390.9	391.2	391.4	391.7	391.9	392.2
142.5°	399.5	400.0	400.5	401.0	401.5	401.8	402.0	402.3	402.5	402.8	403.0
145°	414.7	415.2	415.8	416.4	416.9	417.3	417.4	417.6	417.8	417.9	418.1
147.5°	428.9	429.3	429.7	430.1	430.4	430.7	430.9	431.0	431.2	431.4	431.5
150°	437.7	438.0	438.2	438.5	438.7	438.9	439.0	439.2	439.4	439.5	439.7
152.5°	445.6	445.7	445.9	446.0	446.1	446.2	446.3	446.4	446.5	446.6	446.9
155°	456.7	456.6	456.4	456.3	456.2	456.1	456.2	456.2	456.3	456.4	456.8
157.5°	465.5	465.4	465.4	465.4	465.4	465.3	465.2	465.1	465.0	465.0	465.5
160°	470.7	470.6	470.5	470.4	470.3	470.3	470.2	470.1	470.0	469.9	470.4
162.5°	475.6	475.5	475.2	475.1	474.8	474.7	474.6	474.5	474.4	474.3	474.9
165°	481.7	481.4	481.2	480.9	480.7	480.5	480.5	480.4	480.3	480.2	480.9
167.5°	486.4	486.1	485.8	485.4	485.1	484.9	484.9	484.9	484.9	484.9	485.6
170°	489.0	488.7	488.4	488.0	487.7	487.5	487.5	487.5	487.5	487.5	488.2
172.5°	490.7	490.4	490.0	489.6	489.2	489.0	489.1	489.2	489.3	489.3	489.9
175°	493.0	492.6	492.2	491.8	491.4	491.2	491.3	491.4	491.5	491.5	492.1
177.5°	493.6	493.3	492.9	492.6	492.3	492.2	492.3	492.3	492.4	492.4	492.9
180°	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4
2.5°	1484.7	1487.0	1489.3	1490.4	1490.1	1489.9	1489.6	1489.5
5°	1476.9	1479.8	1482.6	1483.8	1483.2	1482.6	1482.1	1481.5
7.5°	1461.3	1463.8	1466.4	1467.5	1467.1	1466.8	1466.5	1466.2
10°	1446.9	1449.4	1452.0	1453.0	1452.5	1451.9	1451.3	1450.7
12.5°	1431.2	1433.1	1434.9	1435.7	1435.3	1435.0	1434.7	1434.4
15°	1402.7	1405.0	1407.3	1407.6	1405.9	1404.2	1402.5	1400.8
17.5°	1366.8	1368.4	1369.9	1370.4	1369.9	1369.2	1368.6	1368.0
20°	1340.3	1341.4	1342.6	1342.6	1341.8	1340.9	1340.1	1339.2
22.5°	1312.1	1313.0	1313.9	1313.9	1312.8	1311.7	1310.6	1309.5
25°	1265.5	1265.8	1266.1	1265.8	1264.9	1264.0	1263.2	1262.3
27.5°	1215.9	1216.1	1216.3	1215.9	1214.9	1213.7	1212.7	1211.6
30°	1181.6	1181.6	1181.6	1180.6	1178.6	1176.6	1174.6	1172.6
32.5°	1145.6	1144.0	1142.4	1141.1	1140.0	1138.9	1137.8	1136.8
35°	1087.2	1085.5	1083.8	1082.2	1080.8	1079.4	1077.9	1076.5
37.5°	1026.8	1024.7	1022.7	1021.2	1020.3	1019.4	1018.5	1017.6
40°	987.4	985.1	982.8	981.1	980.0	978.8	977.7	976.6
42.5°	946.4	944.1	941.8	940.1	939.0	937.8	936.7	935.6
45°	885.2	881.7	878.3	875.9	874.5	873.0	871.6	870.2
47.5°	820.7	817.3	813.9	811.6	810.4	809.1	807.9	806.7
50°	778.0	774.9	771.8	769.4	767.7	766.0	764.3	762.5
52.5°	734.9	732.2	729.5	727.3	725.6	723.9	722.2	720.5
55°	669.1	666.0	662.8	660.6	659.2	657.7	656.3	654.8
57.5°	604.5	601.7	598.8	596.6	595.0	593.4	591.7	590.0
60°	558.8	556.2	553.7	551.6	550.2	548.8	547.4	545.9
62.5°	514.7	512.1	509.6	507.8	506.8	505.8	504.9	503.9
65°	449.1	446.9	444.6	443.0	442.1	441.3	440.4	439.6
67.5°	384.1	382.0	380.1	378.5	377.3	376.1	374.9	373.7
70°	342.0	340.1	338.0	336.3	334.9	333.5	332.1	330.7
72.5°	299.5	297.7	295.9	294.6	293.9	293.2	292.4	291.7
75°	238.1	236.7	235.2	234.1	233.3	232.4	231.5	230.6
77.5°	180.8	179.9	178.9	178.4	178.4	178.4	178.4	178.4
80°	144.2	144.0	143.7	143.6	143.6	143.6	143.6	143.6
82.5°	111.0	110.5	110.0	109.6	109.3	109.2	108.9	108.7
85°	62.9	62.4	61.8	61.6	61.6	61.6	61.6	61.6
87.5°	24.0	23.8	23.6	23.6	23.6	23.6	23.7	23.7
90°	9.5	9.8	10.1	10.4	10.5	10.7	10.8	11.0
92.5°	10.4	10.9	11.5	11.7	11.9	12.0	12.1	12.1
95°	12.5	13.0	13.6	13.9	13.9	13.9	13.9	13.9
97.5°	13.1	13.8	14.4	14.8	14.8	14.9	15.0	15.1
100°	13.4	14.0	14.7	15.1	15.2	15.2	15.3	15.4
102.5°	20.1	18.0	16.1	15.1	15.2	15.4	15.5	15.7
105°	51.4	37.0	22.6	15.5	15.7	15.8	16.0	16.1
107.5°	125.9	115.4	104.8	94.1	83.2	72.3	61.5	50.6
110°	159.8	157.1	154.4	147.3	135.7	124.0	112.3	100.8



TEST NUMBER: P332214-930

CATALOG NUMBER: S123DIW-S1165D460U930-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	183.8	183.8	183.8	182.6	180.2	177.7	175.3	172.8
115°	211.9	212.7	213.5	214.1	214.4	214.7	215.1	215.4
117.5°	237.3	238.0	238.6	239.0	239.0	239.1	239.2	239.3
120°	254.0	254.7	255.4	255.7	255.7	255.7	255.7	255.7
122.5°	270.4	270.8	271.3	271.5	271.6	271.7	271.7	271.8
125°	293.3	293.5	293.7	293.8	294.0	294.2	294.3	294.5
127.5°	316.4	316.7	316.9	317.0	316.8	316.7	316.5	316.3
130°	330.3	330.6	330.9	331.0	330.8	330.7	330.5	330.4
132.5°	343.5	343.8	344.1	344.2	344.0	343.7	343.5	343.3
135°	363.5	363.7	363.9	363.9	363.7	363.5	363.2	363.0
137.5°	381.3	381.6	382.0	382.2	382.0	381.9	381.7	381.6
140°	392.6	392.9	393.2	393.3	393.1	393.0	392.8	392.6
142.5°	403.3	403.6	403.8	403.8	403.6	403.4	403.2	402.9
145°	418.2	418.4	418.6	418.7	418.7	418.7	418.7	418.7
147.5°	431.7	431.9	432.0	431.9	431.5	431.1	430.8	430.4
150°	439.9	440.0	440.2	440.2	439.9	439.7	439.4	439.2
152.5°	447.2	447.4	447.8	447.7	447.4	446.9	446.6	446.2
155°	457.2	457.6	458.0	458.0	457.5	457.0	456.5	456.1
157.5°	465.9	466.4	466.9	466.8	466.2	465.6	465.0	464.3
160°	470.9	471.4	471.9	471.9	471.3	470.8	470.2	469.6
162.5°	475.5	476.1	476.5	476.6	476.1	475.6	475.1	474.6
165°	481.5	482.2	482.8	482.8	482.2	481.8	481.2	480.6
167.5°	486.2	486.8	487.5	487.5	486.8	486.2	485.6	484.9
170°	488.9	489.5	490.2	490.2	489.5	488.9	488.2	487.5
172.5°	490.6	491.2	491.9	491.9	491.1	490.4	489.8	489.0
175°	492.7	493.3	493.8	493.8	493.2	492.5	491.9	491.2
177.5°	493.5	494.0	494.6	494.5	493.8	493.2	492.5	491.9
180°	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0

(END OF REPORT)