

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: P332053-930

Luminaire Tested: **S123DIP-S1165D365U930-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332053-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-17,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIP-S1165D365U930-4F0-1E-UDD-F4
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

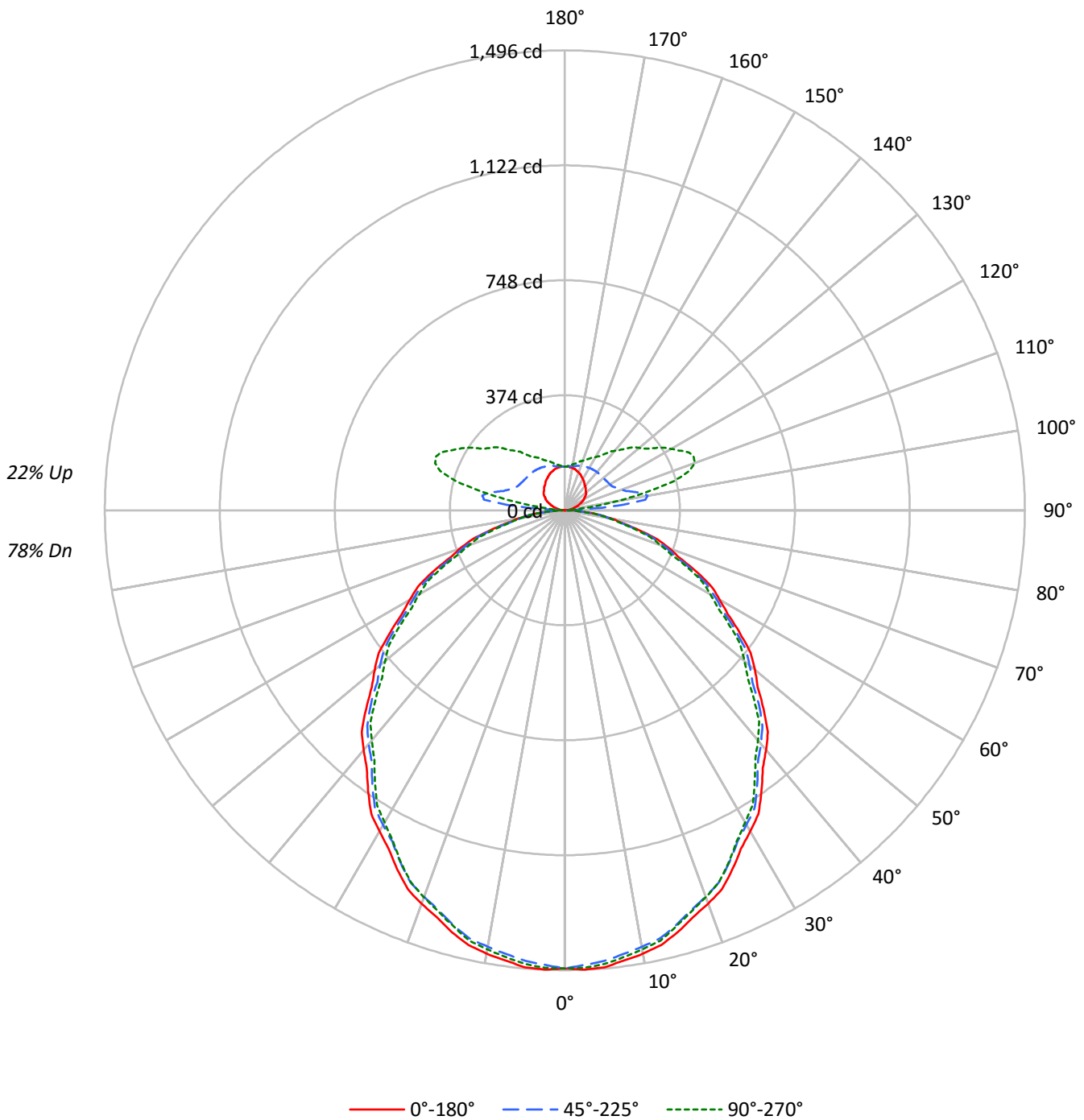
Lumens per Lamp: N/A
Luminaire Lumens: 4950.2 lumens
Efficiency: N/A
Efficacy: 99.4 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 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



TEST NUMBER: P332053-930
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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	114	114	114	114	109	109	109	109	99	99	99	90	90	90	82	82	82	78				78
1	104	99	95	92	99	95	91	88	87	84	81	79	77	75	73	71	69				66	
2	95	87	80	75	90	83	77	72	76	72	67	70	66	63	64	61	58				55	
3	86	76	69	62	82	73	66	61	67	61	57	62	57	53	57	53	50				47	
4	79	68	59	53	75	65	57	51	60	53	48	55	50	46	51	46	43				40	
5	73	61	52	46	69	58	50	44	54	47	42	49	44	40	46	41	37				35	
6	67	54	46	40	64	52	44	39	48	42	37	45	39	35	41	37	33				30	
7	62	49	41	35	59	48	40	34	44	37	33	41	35	31	38	33	29				27	
8	58	45	37	31	55	43	36	30	40	34	29	37	32	28	35	30	26				24	
9	54	41	33	28	52	40	32	27	37	31	26	35	29	25	32	27	24				22	
10	51	38	30	25	48	37	30	25	34	28	24	32	26	23	30	25	22				20	

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



TEST NUMBER: P332053-930

CATALOG NUMBER: S123DIP-S1165D365U930-4F0-1E-UDD-F4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	140.4	2.8
10°-20°	396.4	8.0
20°-30°	585.6	11.8
30°-40°	684.0	13.8
40°-50°	687.7	13.9
50°-60°	604.1	12.2
60°-70°	450.0	9.1
70°-80°	256.4	5.2
80°-90°	74.7	1.5
90°-100°	79.2	1.6
100°-110°	224.3	4.5
110°-120°	220.6	4.5
120°-130°	176.0	3.6
130°-140°	138.8	2.8
140°-150°	103.6	2.1
150°-160°	72.2	1.5
160°-170°	42.4	0.9
170°-180°	13.8	0.3
0°-30°	1122.4	22.7
0°-40°	1806.5	36.5
0°-60°	3098.3	62.6
0°-90°	3879.4	78.4
90°-120°	524.1	10.6
90°-150°	942.4	19.0
90°-180°	1071.0	21.6
0°-180°	4950.2	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°	1	4	7	8	8	4
95°	10	32	171	50	33	11
105°	33	49	232	405	366	36
115°	59	74	177	388	446	58
125°	82	97	165	300	352	73
135°	96	115	163	247	285	74
145°	110	126	161	202	223	69
155°	125	135	156	177	185	57
165°	136	140	149	158	161	38
175°	142	142	143	145	145	13
180°	142	142	142	142	142	



TEST NUMBER: P332053-930
 CATALOG NUMBER: S123DIP-S1165D365U930-4F0-1E-UDD-F4

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	25.6	25.1	24.5	24.2	24.1	24.1	24.1	24.0	23.7
90°	0.6	1.1	1.7	2.6	3.2	3.8	4.6	5.5	6.4	7.2	6.9
92.5°	3.6	5.3	7.7	9.9	12.4	16.6	24.2	36.6	48.8	44.3	33.4
95°	9.8	10.7	13.9	18.8	26.3	37.4	62.0	104.8	152.1	170.9	138.6
97.5°	16.7	17.0	19.5	23.7	31.1	43.3	66.7	115.0	193.9	264.8	283.2
100°	21.4	21.6	23.6	27.6	34.6	45.8	66.0	108.6	184.4	272.9	329.6
102.5°	26.2	26.7	28.5	32.3	38.5	48.8	66.9	103.1	170.6	257.9	331.9
105°	33.4	34.3	36.0	39.5	44.9	53.9	69.5	99.1	153.6	231.6	314.3
107.5°	41.2	42.0	43.7	47.0	52.2	60.5	74.2	98.8	142.8	208.5	283.6
110°	46.6	47.5	49.0	52.2	57.1	65.1	78.1	100.0	138.6	195.3	264.2



TEST NUMBER: P332053-930

CATALOG NUMBER: S123DIP-S1165D365U930-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	51.8	52.6	54.1	57.2	62.1	70.0	82.0	102.3	136.2	186.5	247.4
115°	59.0	60.3	62.0	64.8	69.7	77.5	88.5	106.0	135.4	177.2	227.1
117.5°	66.4	67.7	69.1	71.8	77.3	84.5	95.3	111.0	135.9	171.6	214.7
120°	71.4	72.3	73.8	76.6	82.1	89.3	99.7	114.6	136.9	169.1	208.3
122.5°	75.8	76.7	78.1	81.3	86.5	94.2	104.3	118.1	138.4	167.5	203.0
125°	82.1	82.7	84.4	87.6	93.0	100.9	111.0	123.6	140.9	165.3	196.2
127.5°	86.9	87.7	89.9	93.1	99.1	107.0	116.7	128.1	143.7	164.4	190.2
130°	89.9	90.7	93.4	96.8	102.9	110.6	120.2	131.1	145.5	163.6	186.9
132.5°	92.2	93.3	96.1	100.3	106.3	113.9	123.1	133.9	146.9	163.4	184.0
135°	96.2	97.3	100.5	104.8	111.0	118.7	127.6	137.5	149.0	163.1	180.1
137.5°	100.0	101.3	104.4	108.9	115.0	122.1	130.8	140.1	150.3	162.4	176.7
140°	102.6	104.0	106.9	111.5	117.2	124.5	132.8	141.5	151.2	162.2	174.6
142.5°	105.3	106.6	109.7	113.8	119.6	126.3	134.4	142.8	152.0	161.8	172.8
145°	109.7	110.6	113.2	117.6	122.5	129.1	136.6	144.3	152.4	161.0	170.2
147.5°	114.3	114.8	117.3	121.1	125.8	131.4	138.3	145.3	152.4	160.0	167.9
150°	117.2	117.6	119.8	123.6	127.6	132.8	139.4	145.5	152.4	159.1	166.2
152.5°	120.3	120.3	122.6	125.9	129.5	134.4	140.1	145.9	151.7	157.9	164.4
155°	124.7	124.7	126.5	129.4	132.6	136.6	141.5	146.1	151.0	155.9	161.6
157.5°	128.3	128.6	130.0	132.5	135.2	138.3	142.2	146.3	150.0	154.1	158.5
160°	131.1	131.1	132.2	134.5	136.6	139.4	142.9	146.3	149.5	152.7	156.5
162.5°	133.1	133.1	134.1	135.9	137.7	140.1	143.2	146.1	148.6	151.3	154.3
165°	136.2	136.0	136.6	138.0	139.2	141.2	143.5	145.5	147.2	149.3	151.6
167.5°	138.6	138.3	138.6	139.7	140.5	141.8	143.4	145.0	145.9	147.2	148.9
170°	140.0	139.4	139.7	140.6	141.2	141.8	143.2	144.3	145.0	145.8	147.2
172.5°	141.0	140.6	140.6	141.3	141.6	141.9	143.2	144.1	144.2	144.6	145.6
175°	142.0	141.8	141.5	142.0	142.0	142.4	142.9	143.5	143.2	143.2	143.7
177.5°	142.6	142.4	142.1	142.4	142.4	142.4	142.6	143.0	142.6	142.4	142.6
180°	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4



TEST NUMBER: P332053-930

CATALOG NUMBER: S123DIP-S1165D365U930-4F0-1E-UDD-F4

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°	23.6	23.4	23.2	23.2	23.2	23.2	23.2	23.2
90°	7.2	7.5	7.7	8.3	8.1	8.3	8.6	8.3
92.5°	24.3	19.2	17.0	15.5	15.0	14.1	14.4	13.9
95°	103.7	70.3	55.0	44.7	39.2	36.6	34.6	33.4
97.5°	258.5	207.1	169.9	135.5	114.2	101.3	93.4	91.0
100°	339.7	316.3	282.7	241.7	212.6	191.6	180.3	180.7
102.5°	366.6	365.9	346.3	320.3	297.7	281.0	271.7	265.0
105°	374.5	403.3	408.8	401.4	388.1	377.2	367.9	366.5
107.5°	351.8	398.6	423.9	434.1	434.4	430.6	427.5	424.9
110°	330.2	383.2	419.5	439.7	447.8	450.0	449.5	448.9



TEST NUMBER: P332053-930

CATALOG NUMBER: S123DIP-S1165D365U930-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	308.8	362.9	403.6	429.5	444.3	451.4	453.6	453.7
115°	280.3	330.4	372.8	404.2	425.8	438.5	444.3	445.7
117.5°	259.8	303.0	341.0	372.9	395.5	410.0	418.2	420.2
120°	248.9	287.8	322.4	351.5	374.2	390.4	397.3	399.0
122.5°	240.4	275.6	307.6	334.7	354.9	369.4	377.0	379.2
125°	229.0	260.5	288.1	311.2	329.6	342.3	349.5	351.5
127.5°	219.2	247.1	272.1	293.1	309.5	320.3	326.9	328.6
130°	212.9	238.9	262.2	281.8	297.0	307.4	313.5	315.8
132.5°	207.2	231.0	252.7	271.4	285.8	296.1	301.5	303.1
135°	199.3	219.8	238.6	254.9	269.1	277.8	282.9	284.9
137.5°	192.2	209.0	225.2	239.5	251.3	260.1	264.4	265.8
140°	188.2	202.8	216.6	229.0	240.0	248.1	252.7	252.4
142.5°	184.3	196.8	208.8	219.6	228.9	236.1	240.2	239.9
145°	179.5	189.0	198.2	206.6	213.8	219.8	222.2	222.7
147.5°	175.6	183.2	190.6	196.6	202.0	206.1	208.3	208.6
150°	172.8	179.5	185.6	191.0	195.3	198.5	200.2	200.2
152.5°	170.3	176.0	181.4	186.0	189.3	192.2	193.3	193.3
155°	166.6	171.1	175.5	178.9	181.5	183.8	184.4	184.7
157.5°	162.5	166.3	169.7	172.4	174.6	176.3	176.8	176.8
160°	160.2	163.4	166.2	168.3	170.2	172.0	172.0	171.7
162.5°	157.4	160.1	162.8	164.6	165.9	167.4	167.4	167.1
165°	153.8	155.6	157.6	159.1	160.2	161.3	161.0	161.0
167.5°	150.7	152.1	153.2	154.3	154.7	155.6	155.3	155.3
170°	148.6	149.5	150.7	151.2	151.6	152.1	151.8	151.8
172.5°	146.8	147.5	148.4	148.7	148.8	149.4	148.9	148.6
175°	144.3	144.6	145.2	145.2	145.2	145.5	145.2	145.0
177.5°	142.8	143.0	143.2	143.2	143.0	143.2	142.8	142.8
180°	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4

(END OF REPORT)