

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: P332080-940

Luminaire Tested: **S123DIP-S1165D1025U940-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332080-940  
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-S1165D1025U940-4F0-1E-UDD-F4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1025 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7553.3 lumens  
Efficiency: N/A  
Efficacy: 113.1 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: General Diffuse

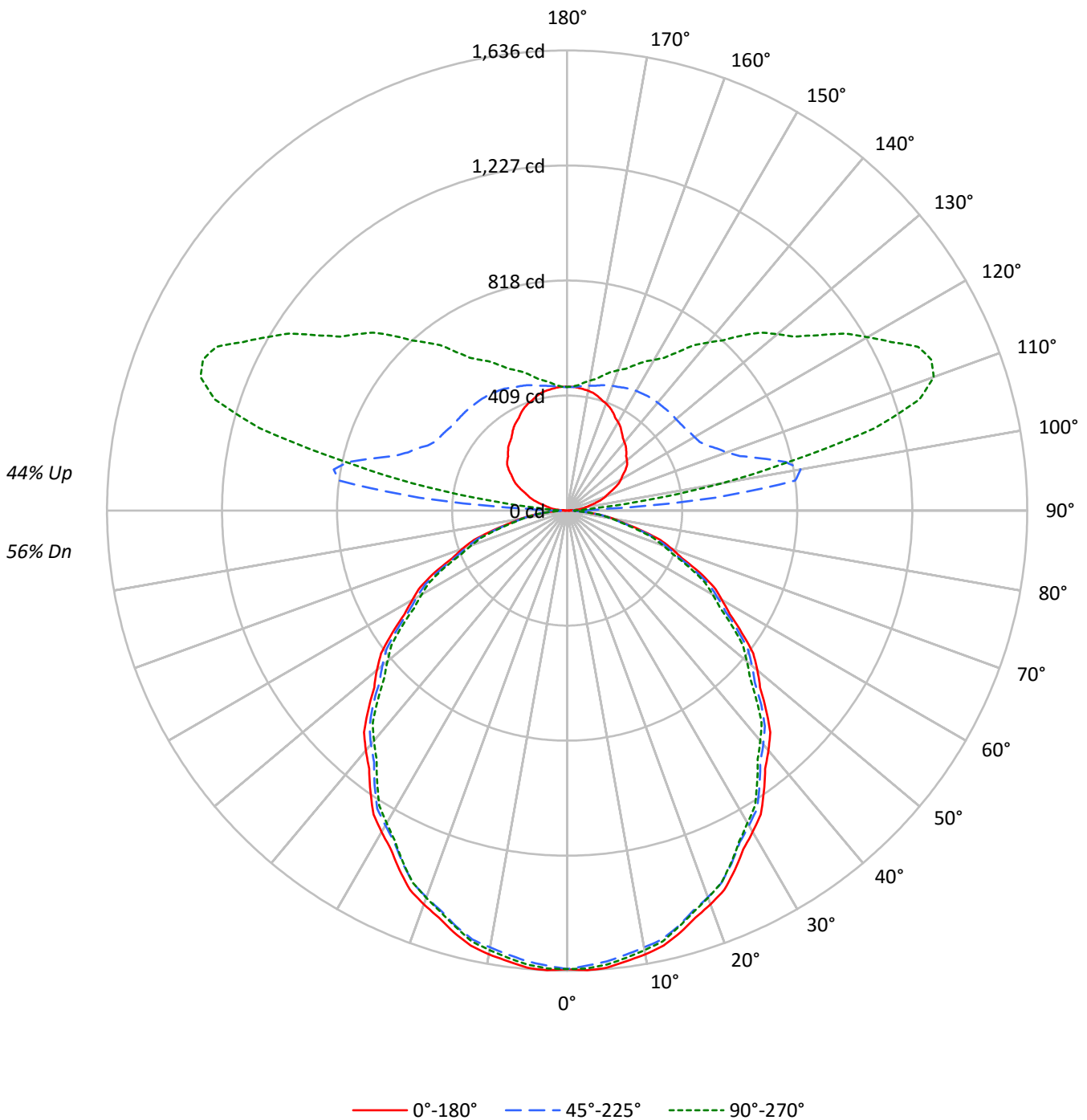
Input Watts (W): 66.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	56
1	99	95	91	87	92	88	85	82	76	73	71	65	63	61	55	53	52	47
2	90	83	76	71	84	77	72	67	67	62	59	57	54	51	48	46	44	39
3	82	73	65	59	76	68	61	56	59	54	49	50	46	43	42	40	37	33
4	75	64	56	50	70	60	53	47	52	47	42	45	41	37	38	35	32	29
5	69	57	49	43	64	54	46	41	47	41	36	40	36	32	34	31	28	25
6	64	51	43	37	59	48	41	35	42	36	32	36	32	28	31	27	25	22
7	59	46	38	33	55	44	36	31	38	32	28	33	28	25	28	25	22	19
8	55	42	34	29	51	40	33	28	35	29	25	30	26	22	26	22	20	17
9	51	39	31	26	47	36	29	25	32	26	22	28	23	20	24	20	18	16
10	48	35	28	23	44	33	27	22	29	24	20	26	21	18	22	19	16	14

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	17546	17546	17546
5°	17629	17386	17507
10°	17511	17235	17343
15°	17307	17041	17072
20°	17068	16763	16778
25°	16747	16431	16397
30°	16394	16063	15940
35°	16025	15674	15471
40°	15638	15244	15008
45°	15213	14850	14487
50°	14788	14364	13966
55°	14230	13863	13440
60°	13670	13276	12854
65°	13173	12638	12246
70°	12441	11909	11383
75°	11366	10959	10493
80°	10253	9819	9732
85°	9003	8657	8312



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	153.6	2.0
10°-20°	433.6	5.7
20°-30°	640.5	8.5
30°-40°	748.2	9.9
40°-50°	752.2	10.0
50°-60°	660.7	8.7
60°-70°	492.2	6.5
70°-80°	280.4	3.7
80°-90°	83.9	1.1
90°-100°	244.7	3.2
100°-110°	692.9	9.2
110°-120°	681.6	9.0
120°-130°	543.7	7.2
130°-140°	428.7	5.7
140°-150°	319.9	4.2
150°-160°	223.0	3.0
160°-170°	131.0	1.7
170°-180°	42.6	0.6
0°-30°	1227.6	16.3
0°-40°	1975.8	26.2
0°-60°	3388.7	44.9
0°-90°	4245.2	56.2
90°-120°	1619.2	21.4
90°-150°	2911.5	38.5
90°-180°	3308.0	43.8
0°-180°	7553.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1630	1630	1630	1630	1630	
5°	1632	1624	1609	1622	1620	155
15°	1553	1547	1529	1539	1532	438
25°	1410	1401	1384	1385	1381	649
35°	1220	1211	1193	1185	1177	763
45°	999	993	976	959	952	771
55°	758	756	739	724	716	679
65°	517	510	496	485	481	510
75°	273	268	264	257	252	292
85°	73	70	70	67	67	80
90°	2	11	22	25	26	6
95°	30	98	528	154	103	33
105°	103	153	716	1251	1132	110
115°	182	227	547	1200	1377	181
125°	254	300	511	926	1086	225
135°	297	355	504	762	880	230
145°	339	389	498	625	688	213
155°	385	416	482	547	570	177
165°	421	433	461	489	498	119
175°	439	439	442	449	448	42
180°	440	440	440	440	440	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1
2.5°	1635.8	1634.8	1633.8	1632.8	1631.7	1629.9	1627.2	1624.4	1621.7	1618.9	1621.4
5°	1631.6	1630.0	1628.4	1626.9	1625.3	1622.8	1619.4	1616.0	1612.6	1609.1	1612.2
7.5°	1615.6	1614.0	1612.5	1610.9	1609.4	1606.8	1603.2	1599.7	1596.2	1592.6	1595.4
10°	1602.1	1600.5	1599.0	1597.4	1595.9	1593.1	1589.0	1585.0	1580.9	1576.9	1579.7
12.5°	1584.2	1582.9	1581.5	1580.3	1579.0	1576.4	1572.6	1568.8	1565.0	1561.2	1563.3
15°	1553.1	1551.8	1550.6	1549.3	1548.1	1545.4	1541.4	1537.3	1533.3	1529.2	1531.7
17.5°	1516.9	1515.3	1513.7	1512.1	1510.4	1507.6	1503.5	1499.5	1495.4	1491.4	1493.2
20°	1490.0	1488.1	1486.2	1484.3	1482.6	1479.5	1475.5	1471.5	1467.4	1463.4	1464.6
22.5°	1459.7	1457.9	1456.0	1454.1	1452.2	1449.3	1445.2	1441.2	1437.2	1433.1	1434.0
25°	1410.1	1408.2	1406.3	1404.4	1402.7	1399.6	1395.6	1391.6	1387.5	1383.5	1383.8
27.5°	1357.1	1355.3	1353.5	1351.7	1349.9	1346.8	1342.5	1338.1	1333.7	1329.4	1329.6
30°	1319.0	1317.4	1315.9	1314.3	1312.8	1309.8	1305.5	1301.1	1296.7	1292.4	1292.4
32.5°	1280.9	1278.8	1276.8	1274.7	1272.6	1269.9	1266.6	1263.2	1259.8	1256.5	1254.7
35°	1219.5	1217.6	1215.8	1213.9	1212.0	1209.1	1205.0	1201.0	1196.9	1192.8	1191.0
37.5°	1156.6	1154.3	1151.9	1149.6	1147.2	1144.0	1139.9	1135.8	1131.7	1127.5	1125.2
40°	1112.9	1111.1	1109.2	1107.3	1105.5	1102.3	1098.0	1093.6	1089.2	1084.9	1082.4
42.5°	1069.2	1067.1	1065.0	1062.8	1060.7	1057.5	1053.1	1048.7	1044.4	1040.1	1037.6
45°	999.4	998.2	996.9	995.7	994.4	991.8	987.7	983.6	979.6	975.5	971.9
47.5°	930.1	928.4	926.6	924.7	922.9	920.2	916.3	912.5	908.7	904.9	901.3
50°	883.1	881.5	879.9	878.4	876.8	874.1	870.0	865.9	861.8	857.8	854.4
52.5°	833.7	832.7	831.6	830.5	829.5	826.8	822.5	818.2	814.0	809.6	806.6
55°	758.3	758.0	757.7	757.4	757.1	754.9	750.8	746.8	742.7	738.7	735.3
57.5°	686.5	685.5	684.4	683.4	682.3	680.2	676.9	673.7	670.5	667.2	664.1
60°	635.0	634.6	634.4	634.0	633.7	631.7	627.9	624.2	620.5	616.7	613.9
62.5°	589.0	588.2	587.4	586.6	585.8	583.4	579.7	576.0	572.3	568.6	565.7
65°	517.2	515.7	514.1	512.6	511.0	508.6	505.5	502.4	499.3	496.2	493.7
67.5°	441.2	439.9	438.5	437.1	435.8	433.9	431.5	429.2	426.8	424.5	422.2
70°	395.3	393.4	391.6	389.7	387.8	385.9	384.1	382.2	380.3	378.4	376.3
72.5°	347.1	345.7	344.3	343.0	341.6	339.8	337.7	335.6	333.5	331.4	329.4
75°	273.3	272.1	270.8	269.6	268.3	267.2	266.4	265.4	264.5	263.5	262.0
77.5°	208.0	207.3	206.6	206.0	205.3	204.4	203.2	202.2	201.0	199.9	198.9
80°	165.4	164.4	163.5	162.6	161.7	160.9	160.2	159.6	159.0	158.4	158.1
82.5°	123.9	123.7	123.5	123.3	123.1	123.0	122.9	122.8	122.6	122.5	122.0
85°	72.9	72.2	71.6	71.0	70.4	70.1	70.1	70.1	70.1	70.1	69.5
87.5°	29.5	29.2	28.7	28.5	28.1	28.0	28.3	28.5	28.8	29.2	28.7
90°	1.8	3.6	5.4	8.0	9.8	11.6	14.3	16.9	19.6	22.3	21.4
92.5°	11.1	16.4	23.9	30.8	38.3	51.5	74.7	113.1	150.6	136.9	103.3
95°	30.2	32.9	42.7	57.9	81.0	115.7	191.4	324.0	469.9	527.8	428.1
97.5°	51.6	52.5	60.2	73.3	96.1	133.7	206.0	355.5	598.9	818.0	875.1
100°	65.9	66.8	73.0	85.4	106.8	141.5	203.8	335.6	569.6	842.9	1018.2
102.5°	80.8	82.4	87.9	99.7	119.0	150.8	206.7	318.4	526.9	796.7	1025.4
105°	103.3	105.9	111.3	122.0	138.8	166.5	214.5	306.2	474.4	715.6	971.1
107.5°	127.1	129.7	134.9	145.4	161.3	186.9	229.1	305.3	441.0	644.1	876.0
110°	144.2	146.9	151.3	161.1	176.2	201.2	241.2	308.9	428.1	603.5	816.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	159.9	162.6	167.0	176.7	191.9	216.2	253.3	316.0	421.0	576.4	764.2
115°	182.4	186.0	191.4	200.3	215.4	239.4	273.2	327.5	418.3	547.4	701.4
117.5°	205.1	209.2	213.7	221.8	238.7	261.0	294.4	342.9	419.9	530.3	663.4
120°	220.7	223.4	227.8	236.7	253.7	275.9	308.0	354.3	422.8	522.5	643.5
122.5°	234.3	236.9	241.4	251.0	267.2	290.9	322.2	365.0	427.8	517.5	627.1
125°	253.7	255.5	260.8	270.5	287.5	311.6	342.7	381.8	435.2	511.0	606.2
127.5°	268.5	271.1	277.7	287.7	306.4	330.4	360.5	395.7	443.8	507.7	587.6
130°	277.7	280.4	288.4	299.1	317.7	341.8	371.1	405.0	449.5	505.6	577.7
132.5°	284.8	288.2	296.9	309.8	328.4	351.8	380.4	413.6	453.8	504.9	568.4
135°	297.3	300.9	310.7	324.0	342.7	366.7	394.3	424.5	460.2	503.8	556.3
137.5°	309.1	312.8	322.4	336.6	355.2	377.4	403.9	432.7	464.4	501.9	545.8
140°	316.9	321.3	330.2	344.5	362.3	384.5	410.4	437.0	467.3	501.1	539.4
142.5°	325.4	329.1	338.8	351.6	369.3	390.2	415.4	441.3	469.4	499.7	533.7
145°	339.1	341.8	349.8	363.2	378.3	398.8	421.9	445.9	470.8	497.6	526.0
147.5°	353.0	354.6	362.5	374.0	388.6	406.1	427.2	448.8	470.8	494.2	518.5
150°	362.3	363.2	370.2	381.8	394.3	410.4	430.8	449.5	470.8	491.3	513.5
152.5°	371.5	371.7	378.8	389.0	400.0	415.4	432.9	450.9	468.7	487.8	507.9
155°	385.4	385.4	390.7	399.7	409.5	421.9	437.0	451.3	466.4	481.5	499.4
157.5°	396.5	397.2	401.4	409.3	417.6	427.2	439.3	452.2	463.4	476.0	489.7
160°	405.0	405.0	408.6	415.6	421.9	430.8	441.5	452.2	462.0	471.7	483.3
162.5°	411.4	411.4	414.3	419.9	425.4	432.9	442.2	451.5	459.1	467.4	476.9
165°	421.0	420.1	421.9	426.3	429.9	436.1	443.3	449.5	454.9	461.1	468.1
167.5°	428.3	427.2	428.1	431.5	434.0	437.9	443.1	448.1	450.6	454.7	459.9
170°	432.6	430.8	431.7	434.4	436.1	437.9	442.4	445.9	447.7	450.4	454.9
172.5°	435.4	434.4	434.5	436.5	437.6	438.6	442.4	445.2	445.6	446.8	449.9
175°	438.8	437.9	437.0	438.8	438.8	439.7	441.5	443.3	442.4	442.4	444.2
177.5°	440.4	439.7	439.0	439.7	439.7	439.7	440.4	441.8	440.4	439.7	440.4
180°	439.7	439.7	439.7	439.7	439.7	439.7	439.7	439.7	439.7	439.7	439.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1
2.5°	1623.9	1626.4	1628.9	1630.0	1629.8	1629.5	1629.2	1629.1
5°	1615.3	1618.5	1621.6	1622.8	1622.2	1621.6	1621.0	1620.3
7.5°	1598.2	1601.0	1603.8	1605.0	1604.6	1604.3	1603.9	1603.6
10°	1582.5	1585.3	1588.1	1589.2	1588.6	1588.0	1587.3	1586.7
12.5°	1565.3	1567.4	1569.4	1570.3	1569.9	1569.5	1569.1	1568.8
15°	1534.2	1536.7	1539.2	1539.5	1537.7	1535.8	1533.9	1532.0
17.5°	1494.9	1496.6	1498.3	1498.9	1498.3	1497.5	1496.8	1496.2
20°	1465.9	1467.1	1468.4	1468.5	1467.6	1466.6	1465.7	1464.7
22.5°	1435.1	1436.1	1437.1	1437.0	1435.8	1434.6	1433.4	1432.3
25°	1384.1	1384.4	1384.7	1384.4	1383.5	1382.5	1381.6	1380.6
27.5°	1329.9	1330.1	1330.3	1329.9	1328.7	1327.5	1326.3	1325.2
30°	1292.4	1292.4	1292.4	1291.3	1289.1	1286.9	1284.7	1282.5
32.5°	1252.9	1251.2	1249.5	1248.0	1246.9	1245.6	1244.5	1243.3
35°	1189.1	1187.2	1185.4	1183.7	1182.1	1180.5	1178.9	1177.4
37.5°	1123.0	1120.8	1118.6	1117.0	1115.9	1114.9	1113.9	1112.9
40°	1080.0	1077.5	1075.0	1073.1	1071.8	1070.6	1069.3	1068.1
42.5°	1035.1	1032.6	1030.1	1028.2	1027.0	1025.7	1024.5	1023.2
45°	968.1	964.4	960.6	958.0	956.4	954.8	953.3	951.7
47.5°	897.6	893.9	890.2	887.7	886.4	884.9	883.6	882.3
50°	851.0	847.6	844.1	841.5	839.6	837.8	835.9	834.0
52.5°	803.8	800.8	797.9	795.5	793.6	791.8	789.9	788.0
55°	731.8	728.4	725.0	722.5	720.9	719.3	717.8	716.2
57.5°	661.1	658.1	655.0	652.6	650.8	649.0	647.1	645.3
60°	611.2	608.3	605.6	603.3	601.8	600.2	598.7	597.1
62.5°	562.9	560.1	557.3	555.4	554.3	553.2	552.2	551.2
65°	491.2	488.7	486.2	484.6	483.6	482.7	481.7	480.8
67.5°	420.1	417.9	415.7	413.9	412.7	411.3	410.0	408.8
70°	374.1	371.9	369.7	367.8	366.3	364.7	363.2	361.7
72.5°	327.5	325.6	323.6	322.3	321.5	320.7	319.9	319.1
75°	260.4	258.9	257.3	256.0	255.1	254.1	253.2	252.3
77.5°	197.8	196.7	195.6	195.1	195.1	195.1	195.1	195.1
80°	157.7	157.5	157.1	157.0	157.0	157.0	157.0	157.0
82.5°	121.4	120.8	120.3	119.8	119.6	119.4	119.1	118.9
85°	68.8	68.2	67.6	67.3	67.3	67.3	67.3	67.3
87.5°	28.6	28.5	28.4	28.7	28.5	28.7	28.9	28.7
90°	22.3	23.2	24.1	25.8	24.9	25.8	26.7	25.8
92.5°	74.9	59.5	52.5	47.9	46.3	43.6	44.5	42.9
95°	320.4	217.2	170.0	137.9	121.1	113.1	106.8	103.3
97.5°	798.8	639.8	525.0	418.5	352.8	312.8	288.7	281.1
100°	1049.5	977.3	873.2	746.8	656.9	591.9	557.2	558.1
102.5°	1132.7	1130.4	1069.7	989.6	919.6	868.2	839.2	818.7
105°	1157.1	1246.2	1263.0	1239.9	1198.9	1165.1	1136.7	1132.2
107.5°	1087.0	1231.5	1309.5	1341.2	1341.9	1330.5	1320.9	1312.7
110°	1020.0	1183.8	1295.9	1358.3	1383.2	1390.4	1388.6	1386.8





TEST NUMBER: P332080-940

CATALOG NUMBER: S123DIP-S1165D1025U940-4F0-1E-UDD-F4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	953.8	1121.1	1246.8	1327.0	1372.5	1394.5	1401.3	1401.7
115°	866.0	1020.9	1151.7	1248.8	1315.5	1354.7	1372.5	1377.0
117.5°	802.5	936.2	1053.6	1152.1	1221.7	1266.6	1292.3	1298.2
120°	769.0	889.2	996.0	1085.9	1156.2	1206.0	1227.4	1232.8
122.5°	742.7	851.5	950.5	1033.9	1096.4	1141.3	1164.8	1171.5
125°	707.7	804.7	890.1	961.3	1018.2	1057.4	1079.7	1085.9
127.5°	677.0	763.5	840.6	905.4	956.1	989.6	1009.7	1015.4
130°	657.8	737.9	809.9	870.5	917.7	949.8	968.4	975.5
132.5°	640.0	713.6	780.8	838.5	882.8	914.8	931.4	936.4
135°	615.9	679.1	737.0	787.7	831.3	858.0	874.1	880.3
137.5°	594.1	645.9	695.7	739.7	776.3	803.4	816.9	821.0
140°	581.2	626.6	669.3	707.7	741.5	766.3	780.6	779.7
142.5°	569.1	608.1	645.2	678.4	707.3	729.3	742.2	741.3
145°	554.6	583.9	612.3	638.2	660.4	679.1	686.3	688.0
147.5°	542.6	565.9	588.9	607.3	624.1	636.8	643.5	644.3
150°	534.0	554.6	573.2	590.1	603.5	613.2	618.6	618.6
152.5°	526.2	543.9	560.4	574.4	585.0	594.1	597.3	597.3
155°	514.4	528.7	542.1	552.8	560.8	567.8	569.6	570.5
157.5°	502.0	513.9	524.2	532.6	539.6	544.9	546.4	546.2
160°	494.9	504.7	513.5	519.8	526.0	531.4	531.4	530.5
162.5°	486.3	494.7	502.9	508.5	512.6	517.1	517.1	516.2
165°	475.3	480.6	486.9	491.3	494.9	498.5	497.6	497.6
167.5°	465.7	469.8	473.3	476.5	478.1	480.6	479.7	479.7
170°	459.3	462.0	465.5	467.3	468.1	469.9	469.0	469.0
172.5°	453.6	455.6	458.4	459.5	459.7	461.5	459.9	459.1
175°	445.9	446.8	448.6	448.6	448.6	449.5	448.6	447.7
177.5°	441.1	441.8	442.6	442.6	441.8	442.6	441.1	441.1
180°	439.7	439.7	439.7	439.7	439.7	439.7	439.7	439.7

(END OF REPORT)