

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: P332086

Luminaire Tested: **S123DIP-S1165D1195U835-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332086
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-S1165D1195U835-4F0-1E-UDD-D4
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1195 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9171.7 lumens
Efficiency: N/A
Efficacy: 127.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: General Diffuse

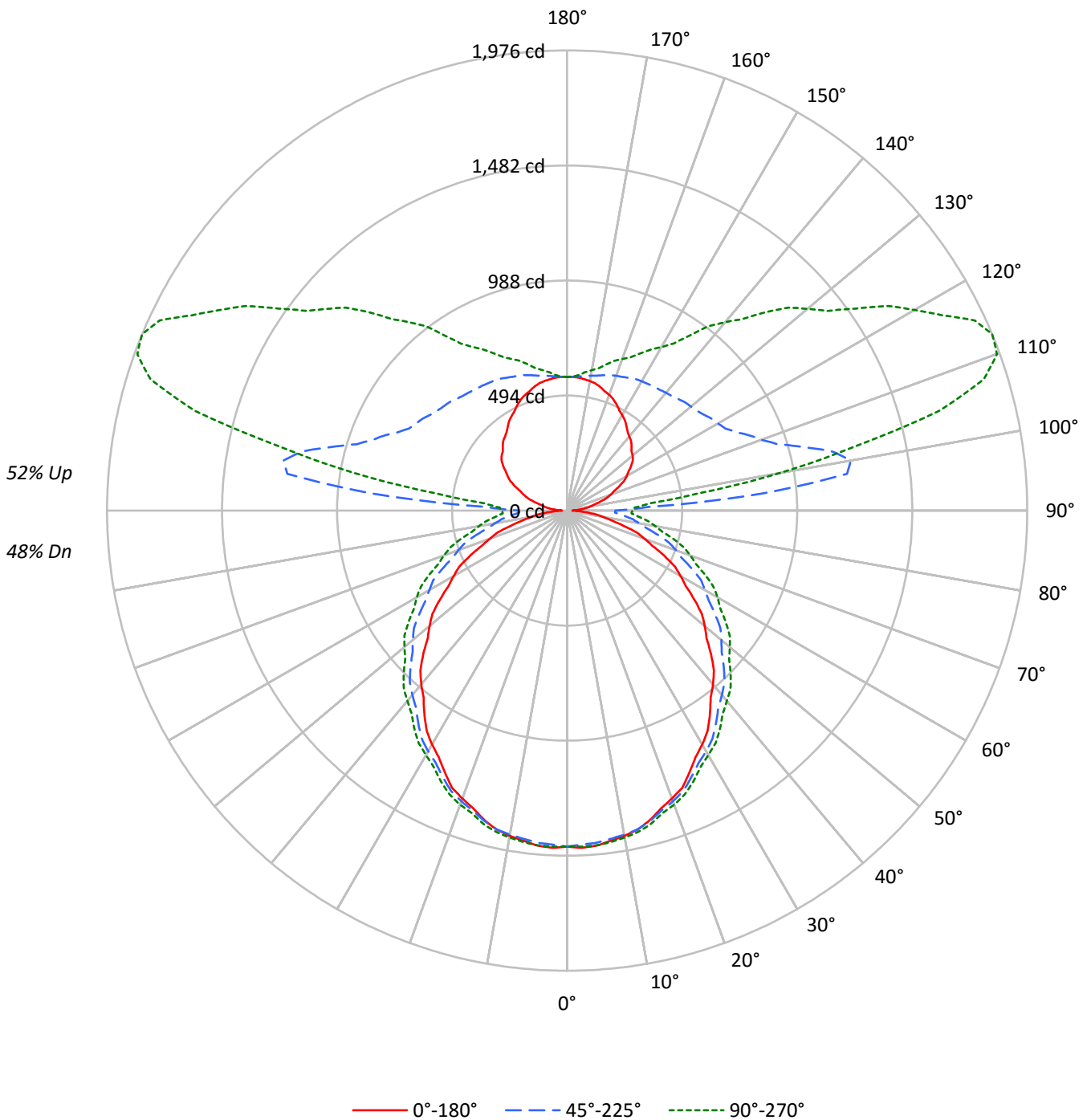
Input Watts (W): 71.7
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332086

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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	50	30	10	0													
RCR																																					
0	107	107	107	107	98	98	98	98	82	82	82	68	68	68	55	55	55	48						48													
1	96	92	87	84	88	84	81	77	71	68	66	58	56	55	47	45	44	39						39													
2	87	79	73	67	80	73	67	63	61	57	53	51	47	45	41	38	36	32						32													
3	79	69	62	56	73	64	57	52	54	49	45	44	41	37	36	33	31	26						26													
4	73	61	53	47	66	57	49	44	48	42	38	39	35	32	32	29	26	22						22													
5	66	54	46	40	61	50	43	37	42	37	32	35	31	27	28	25	23	19						19													
6	61	49	40	34	56	45	38	32	38	32	28	32	27	24	26	22	20	17						17													
7	56	44	36	30	52	41	33	28	35	29	25	29	24	21	23	20	17	15						15													
8	52	40	32	26	48	37	30	25	31	26	22	26	22	19	21	18	16	13						13													
9	49	36	29	24	45	34	27	22	29	23	19	24	20	17	20	16	14	12						12													
10	45	33	26	21	42	31	24	20	26	21	17	22	18	15	18	15	13	11						11													

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	15532	15532	15532
5°	15581	15141	15150
10°	15441	14792	14718
15°	15242	14397	14247
20°	14958	13944	13729
25°	14607	13423	13185
30°	14248	12956	12632
35°	13844	12460	12191
40°	13459	12010	11719
45°	13033	11577	11342
50°	12611	11149	10926
55°	12146	10713	10553
60°	11692	10267	10169
65°	11230	9793	9712
70°	10529	9260	9244
75°	9643	8650	8768
80°	8626	8052	8224
85°	7681	7639	7911



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CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-UDD-D4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.8	1.5
10°-20°	390.0	4.3
20°-30°	583.2	6.4
30°-40°	696.5	7.6
40°-50°	728.7	7.9
50°-60°	683.9	7.5
60°-70°	571.2	6.2
70°-80°	408.7	4.5
80°-90°	248.1	2.7
90°-100°	472.3	5.1
100°-110°	1016.8	11.1
110°-120°	964.8	10.5
120°-130°	752.6	8.2
130°-140°	578.8	6.3
140°-150°	421.7	4.6
150°-160°	291.1	3.2
160°-170°	171.0	1.9
170°-180°	55.6	0.6
0°-30°	1110.0	12.1
0°-40°	1806.5	19.7
0°-60°	3219.1	35.1
0°-90°	4447.0	48.5
90°-120°	2453.9	26.8
90°-150°	4207.0	45.9
90°-180°	4725.0	51.5
0°-180°	9171.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1443	1443	1443	1443	1443	
5°	1445	1441	1432	1444	1443	137
15°	1375	1380	1379	1393	1393	387
25°	1242	1257	1262	1282	1283	572
35°	1069	1094	1114	1137	1144	668
45°	874	912	951	980	993	674
55°	666	719	775	816	830	597
65°	461	522	591	636	654	455
75°	250	324	402	452	473	267
85°	77	156	239	290	308	81
90°	23	112	207	262	280	17
95°	57	208	845	404	355	56
105°	147	251	1052	1794	1654	156
115°	246	326	798	1686	1931	244
125°	336	398	717	1290	1512	298
135°	391	466	676	1041	1204	302
145°	444	507	650	828	917	278
155°	503	543	629	715	745	231
165°	550	565	602	638	650	155
175°	573	573	577	586	584	54
180°	574	574	574	574	574	



TEST NUMBER: P332086

CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0
2.5°	1449.3	1448.5	1447.6	1446.8	1445.9	1444.4	1442.2	1439.9	1437.7	1435.5	1437.7
5°	1444.6	1443.9	1443.2	1442.5	1441.8	1440.4	1438.3	1436.2	1434.1	1432.0	1434.8
7.5°	1430.4	1430.6	1430.7	1430.9	1431.0	1430.1	1428.0	1426.0	1424.0	1421.9	1425.4
10°	1417.9	1418.6	1419.3	1420.0	1420.7	1420.1	1418.4	1416.6	1414.9	1413.1	1416.6
12.5°	1402.8	1403.7	1404.7	1405.7	1406.7	1406.6	1405.4	1404.2	1403.0	1401.8	1405.0
15°	1375.4	1376.5	1377.5	1378.6	1379.6	1380.0	1379.6	1379.3	1378.9	1378.6	1382.1
17.5°	1340.8	1342.9	1345.0	1347.1	1349.2	1350.2	1350.1	1349.9	1349.8	1349.6	1352.8
20°	1315.7	1317.8	1319.9	1322.0	1324.1	1325.5	1326.2	1326.9	1327.6	1328.3	1331.4
22.5°	1289.3	1291.4	1293.5	1295.6	1297.7	1299.2	1300.2	1301.2	1302.1	1303.1	1307.1
25°	1241.8	1245.3	1248.8	1252.3	1255.8	1258.0	1259.1	1260.1	1261.2	1262.2	1266.8
27.5°	1194.0	1198.0	1202.0	1206.0	1209.9	1213.1	1215.3	1217.5	1219.8	1222.0	1225.9
30°	1160.1	1164.6	1169.1	1173.7	1178.2	1181.9	1184.7	1187.5	1190.3	1193.1	1197.3
32.5°	1122.3	1127.4	1132.5	1137.6	1142.7	1147.1	1150.7	1154.4	1158.0	1161.6	1166.1
35°	1068.9	1074.5	1080.1	1085.7	1091.3	1096.3	1100.9	1105.4	1109.9	1114.5	1119.7
37.5°	1012.3	1018.6	1024.9	1031.2	1037.5	1043.4	1049.0	1054.6	1060.2	1065.8	1071.7
40°	974.6	980.9	987.2	993.4	999.7	1006.4	1013.4	1020.3	1027.3	1034.3	1040.3
42.5°	933.1	940.8	948.5	956.1	963.8	971.3	978.6	985.8	993.1	1000.4	1006.9
45°	874.0	882.4	890.7	899.1	907.5	916.1	924.8	933.5	942.3	951.0	957.6
47.5°	812.0	821.5	831.0	840.6	850.1	859.8	869.8	879.8	889.8	899.8	907.2
50°	771.8	781.6	791.4	801.1	810.9	821.2	832.1	842.9	853.7	864.5	872.6
52.5°	729.1	739.4	749.7	760.1	770.4	781.6	793.5	805.4	817.4	829.3	837.7
55°	666.5	678.0	689.5	701.1	712.6	724.6	737.2	749.8	762.4	775.0	784.4
57.5°	605.5	617.5	629.5	641.5	653.6	666.5	680.2	694.0	707.7	721.5	731.0
60°	562.7	575.3	587.9	600.5	613.0	626.5	640.8	655.1	669.5	683.8	693.6
62.5°	522.5	535.4	548.2	561.1	573.9	587.9	603.1	618.2	633.4	648.6	658.3
65°	460.6	474.2	487.8	501.4	515.1	529.6	544.9	560.3	575.7	591.0	601.5
67.5°	397.7	412.2	426.6	441.1	455.5	470.6	486.2	501.9	517.5	533.2	544.6
70°	353.7	368.7	383.7	398.7	413.8	429.7	446.4	463.2	480.0	496.7	507.9
72.5°	313.4	328.5	343.5	358.5	373.5	389.7	407.0	424.3	441.7	459.0	470.5
75°	249.9	266.4	282.8	299.2	315.6	332.5	350.0	367.5	384.9	402.4	413.9
77.5°	194.6	211.2	227.7	244.3	260.8	277.9	295.5	313.1	330.7	348.3	360.5
80°	155.6	172.7	189.9	207.0	224.1	241.7	259.9	278.1	296.2	314.4	326.3
82.5°	121.7	139.1	156.5	173.9	191.2	209.2	227.6	246.1	264.5	282.9	294.8
85°	77.0	94.5	112.0	129.4	146.9	164.9	183.4	201.9	220.4	238.9	250.8
87.5°	42.3	60.1	78.0	96.1	114.0	132.0	150.5	169.0	187.6	206.1	217.7
90°	22.8	42.2	61.6	82.2	101.7	121.5	142.8	164.1	185.4	206.7	217.4
92.5°	33.6	56.0	81.2	105.7	130.9	164.6	212.6	280.0	346.6	346.3	313.9
95°	56.8	73.9	100.3	133.7	177.5	238.2	354.1	544.3	752.0	844.6	725.3
97.5°	82.8	96.2	118.5	148.0	190.1	253.4	364.1	575.6	909.6	1212.0	1297.0
100°	100.1	112.5	131.8	159.2	198.3	257.2	354.6	542.6	864.3	1237.0	1476.0
102.5°	118.4	130.5	147.8	173.2	208.4	262.9	351.6	513.3	801.2	1169.1	1477.5
105°	147.3	159.2	174.6	196.9	227.4	275.1	352.8	487.5	722.1	1052.0	1395.2
107.5°	176.6	187.2	201.1	221.9	249.7	293.9	363.2	476.9	668.2	947.6	1259.7
110°	197.7	207.4	219.5	238.6	264.6	307.3	373.5	475.8	645.5	888.3	1175.1



TEST NUMBER: P332086

CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	218.1	226.8	237.7	255.7	280.6	321.5	383.5	478.7	629.2	845.5	1099.4
115°	246.0	254.9	266.0	281.9	305.8	345.5	402.3	485.7	616.8	797.8	1007.2
117.5°	275.2	283.2	291.6	304.8	329.5	365.7	421.2	496.2	608.7	764.5	946.7
120°	294.4	299.7	307.2	320.6	344.4	380.1	433.4	505.4	606.4	748.0	914.1
122.5°	312.1	316.5	323.2	336.7	358.7	395.6	447.4	514.2	607.1	735.2	886.1
125°	335.8	338.2	345.1	357.9	380.0	416.4	467.2	528.5	608.3	717.2	848.9
127.5°	355.1	358.3	366.5	379.2	403.2	438.6	486.3	540.7	611.8	703.6	814.8
130°	367.2	370.3	380.5	394.0	418.1	452.8	498.1	549.3	614.3	694.5	795.3
132.5°	375.2	379.6	390.9	407.6	431.9	465.1	508.1	556.9	615.0	687.3	776.6
135°	391.2	395.5	407.9	425.0	449.1	482.2	522.0	565.4	615.7	676.5	751.3
137.5°	406.2	410.8	423.1	441.4	465.3	495.3	532.1	571.9	615.4	666.4	729.3
140°	415.2	421.0	432.6	451.2	474.4	504.0	538.8	574.7	615.2	660.4	715.6
142.5°	426.3	430.9	443.2	459.7	482.6	509.8	542.7	576.9	613.8	653.5	702.6
145°	444.2	447.4	457.5	474.6	494.0	520.5	550.7	582.1	614.6	649.5	689.4
147.5°	460.8	462.9	473.1	488.2	507.3	530.0	557.7	585.8	614.6	645.1	677.7
150°	472.9	474.0	483.3	498.4	514.7	535.6	562.3	586.7	614.6	641.3	670.4
152.5°	485.0	485.2	494.5	507.7	522.1	542.1	565.1	588.6	611.8	636.7	663.0
155°	503.1	503.1	510.1	521.7	534.4	550.7	570.5	589.1	608.8	628.6	651.8
157.5°	517.5	518.4	524.0	534.2	545.1	557.7	573.5	590.2	604.9	621.4	639.2
160°	528.6	528.6	533.3	542.6	550.7	562.3	576.3	590.2	603.0	615.8	630.9
162.5°	537.0	537.0	540.7	548.2	555.4	565.1	577.2	589.3	599.3	610.2	622.5
165°	549.6	548.4	550.7	556.5	561.2	569.3	578.6	586.7	593.7	601.8	611.1
167.5°	559.1	557.7	558.8	563.3	566.5	571.6	578.4	584.9	588.1	593.5	600.2
170°	564.7	562.3	563.5	567.0	569.3	571.6	577.4	582.1	584.4	587.9	593.7
172.5°	568.4	567.0	567.2	569.8	571.2	572.6	577.4	581.2	581.6	583.2	587.2
175°	572.8	571.6	570.5	572.8	572.8	574.0	576.3	578.6	577.4	577.4	579.8
177.5°	574.9	574.0	573.0	574.0	574.0	574.0	574.9	576.7	574.9	574.0	574.9
180°	574.0	574.0	574.0	574.0	574.0	574.0	574.0	574.0	574.0	574.0	574.0



TEST NUMBER: P332086

CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0
2.5°	1439.9	1442.2	1444.4	1445.4	1445.1	1444.8	1444.5	1444.3
5°	1437.6	1440.4	1443.2	1444.4	1444.1	1443.7	1443.4	1443.0
7.5°	1428.9	1432.4	1435.9	1437.5	1437.0	1436.6	1436.2	1435.8
10°	1420.1	1423.6	1427.1	1428.5	1427.8	1427.1	1426.4	1425.7
12.5°	1408.3	1411.5	1414.7	1415.9	1415.2	1414.5	1413.8	1413.1
15°	1385.5	1389.0	1392.5	1394.1	1393.8	1393.4	1393.1	1392.7
17.5°	1355.9	1359.1	1362.2	1363.5	1363.1	1362.6	1362.1	1361.6
20°	1334.5	1337.7	1340.8	1342.6	1342.9	1343.3	1343.6	1344.0
22.5°	1311.1	1315.1	1319.0	1320.9	1320.7	1320.5	1320.3	1320.1
25°	1271.3	1275.9	1280.4	1282.7	1282.7	1282.7	1282.7	1282.7
27.5°	1229.8	1233.7	1237.6	1239.7	1240.0	1240.3	1240.6	1240.9
30°	1201.5	1205.7	1209.8	1211.9	1211.9	1211.9	1211.9	1211.9
32.5°	1170.6	1175.1	1179.5	1182.2	1183.0	1183.9	1184.7	1185.5
35°	1125.0	1130.2	1135.4	1138.8	1140.2	1141.6	1143.0	1144.3
37.5°	1077.6	1083.6	1089.5	1093.0	1094.2	1095.3	1096.4	1097.5
40°	1046.2	1052.1	1058.1	1061.7	1063.1	1064.5	1065.9	1067.3
42.5°	1013.4	1019.9	1026.4	1030.6	1032.5	1034.5	1036.4	1038.4
45°	964.3	970.9	977.6	982.3	985.1	987.9	990.7	993.4
47.5°	914.7	922.2	929.7	934.5	936.6	938.8	941.0	943.1
50°	880.6	888.7	896.7	901.9	904.4	906.8	909.3	911.7
52.5°	846.0	854.3	862.6	868.3	871.3	874.3	877.3	880.3
55°	793.8	803.2	812.7	818.8	821.6	824.4	827.2	830.0
57.5°	740.5	750.0	759.5	765.9	769.2	772.5	775.8	779.0
60°	703.3	713.1	722.9	729.7	733.6	737.4	741.2	745.1
62.5°	668.1	677.9	687.7	694.4	697.9	701.5	705.1	708.6
65°	612.0	622.5	633.0	639.9	643.4	646.9	650.4	653.9
67.5°	556.1	567.6	579.0	586.2	589.2	592.1	595.0	598.0
70°	519.1	530.3	541.4	548.8	552.3	555.8	559.2	562.7
72.5°	481.9	493.4	504.8	512.3	515.8	519.3	522.8	526.3
75°	425.5	437.0	448.5	456.4	460.6	464.8	469.0	473.1
77.5°	372.6	384.8	397.0	404.6	407.9	411.1	414.3	417.5
80°	338.1	350.0	361.9	369.6	373.1	376.6	380.1	383.5
82.5°	306.7	318.6	330.4	338.1	341.6	345.1	348.6	352.1
85°	262.7	274.6	286.4	294.1	297.6	301.1	304.6	308.1
87.5°	229.8	241.9	254.0	262.2	265.5	269.2	272.9	276.2
90°	230.4	243.5	256.5	266.5	268.8	273.5	278.2	280.5
92.5°	288.6	280.0	282.5	283.9	285.0	284.7	289.1	290.2
95°	595.5	471.6	420.8	386.2	367.6	360.6	356.0	354.8
97.5°	1207.8	1010.7	871.2	739.2	656.9	608.1	580.3	573.8
100°	1526.8	1442.9	1317.0	1158.9	1045.0	963.7	921.9	926.5
102.5°	1627.5	1634.3	1564.9	1467.0	1379.2	1315.5	1281.2	1257.9
105°	1647.9	1773.8	1805.7	1781.9	1731.6	1690.6	1656.6	1653.9
107.5°	1544.5	1742.5	1853.6	1901.2	1905.2	1893.4	1884.0	1876.3
110°	1450.2	1673.1	1828.6	1915.8	1951.2	1963.3	1963.7	1964.2



TEST NUMBER: P332086

CATALOG NUMBER: S123DIP-S1165D1195U835-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1355.7	1582.9	1755.8	1866.3	1928.8	1960.7	1972.6	1976.2
115°	1230.6	1441.1	1620.3	1752.5	1842.4	1896.4	1922.4	1931.0
117.5°	1136.5	1319.3	1481.0	1615.0	1708.6	1769.8	1806.0	1816.7
120°	1085.9	1250.8	1398.3	1520.9	1615.1	1682.6	1712.9	1722.3
122.5°	1044.7	1194.4	1331.4	1445.5	1529.5	1590.5	1623.6	1634.9
125°	988.6	1122.6	1241.5	1339.3	1416.1	1469.7	1501.2	1511.8
127.5°	938.4	1058.3	1165.8	1255.0	1323.6	1369.7	1398.3	1408.1
130°	906.5	1017.7	1118.4	1201.8	1265.5	1309.4	1335.9	1347.3
132.5°	876.4	978.9	1072.9	1152.6	1212.8	1257.0	1281.0	1289.9
135°	835.4	924.2	1006.0	1076.3	1134.9	1171.5	1194.2	1204.1
137.5°	797.8	870.9	941.5	1002.5	1052.1	1089.2	1108.6	1115.7
140°	775.5	839.9	901.0	954.4	1000.3	1034.6	1054.9	1055.5
142.5°	753.5	809.1	862.1	908.8	948.1	978.7	997.2	997.8
145°	729.4	770.6	810.5	846.3	876.8	902.6	913.3	917.0
147.5°	709.9	741.2	772.0	797.0	820.3	838.1	848.2	850.4
150°	697.1	723.8	748.2	770.7	788.8	802.3	809.9	810.6
152.5°	686.9	709.9	731.5	749.9	763.8	775.8	780.1	780.2
155°	671.5	690.1	707.6	721.5	732.0	741.3	743.6	744.7
157.5°	655.3	670.9	684.3	695.2	704.3	711.3	713.1	712.9
160°	646.0	658.8	670.4	678.5	686.7	693.6	693.6	692.5
162.5°	634.8	645.8	656.4	663.6	669.0	675.0	675.0	673.9
165°	620.4	627.4	635.5	641.3	646.0	650.6	649.5	649.5
167.5°	607.9	613.2	617.9	622.1	624.1	627.4	626.2	626.2
170°	599.5	603.0	607.6	610.0	611.1	613.5	612.3	612.3
172.5°	592.1	594.6	598.4	599.7	600.0	602.3	600.2	599.3
175°	582.1	583.2	585.6	585.6	585.6	586.7	585.6	584.4
177.5°	575.8	576.7	577.7	577.7	576.7	577.7	575.8	575.8
180°	574.0	574.0	574.0	574.0	574.0	574.0	574.0	574.0

(END OF REPORT)