

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: P332086-830

Luminaire Tested: **S123DIP-S1165D1195U830-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332086-830
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-S1165D1195U830-4F0-1E-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: 8644.8 lumens
Efficiency: N/A
Efficacy: 120.6 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

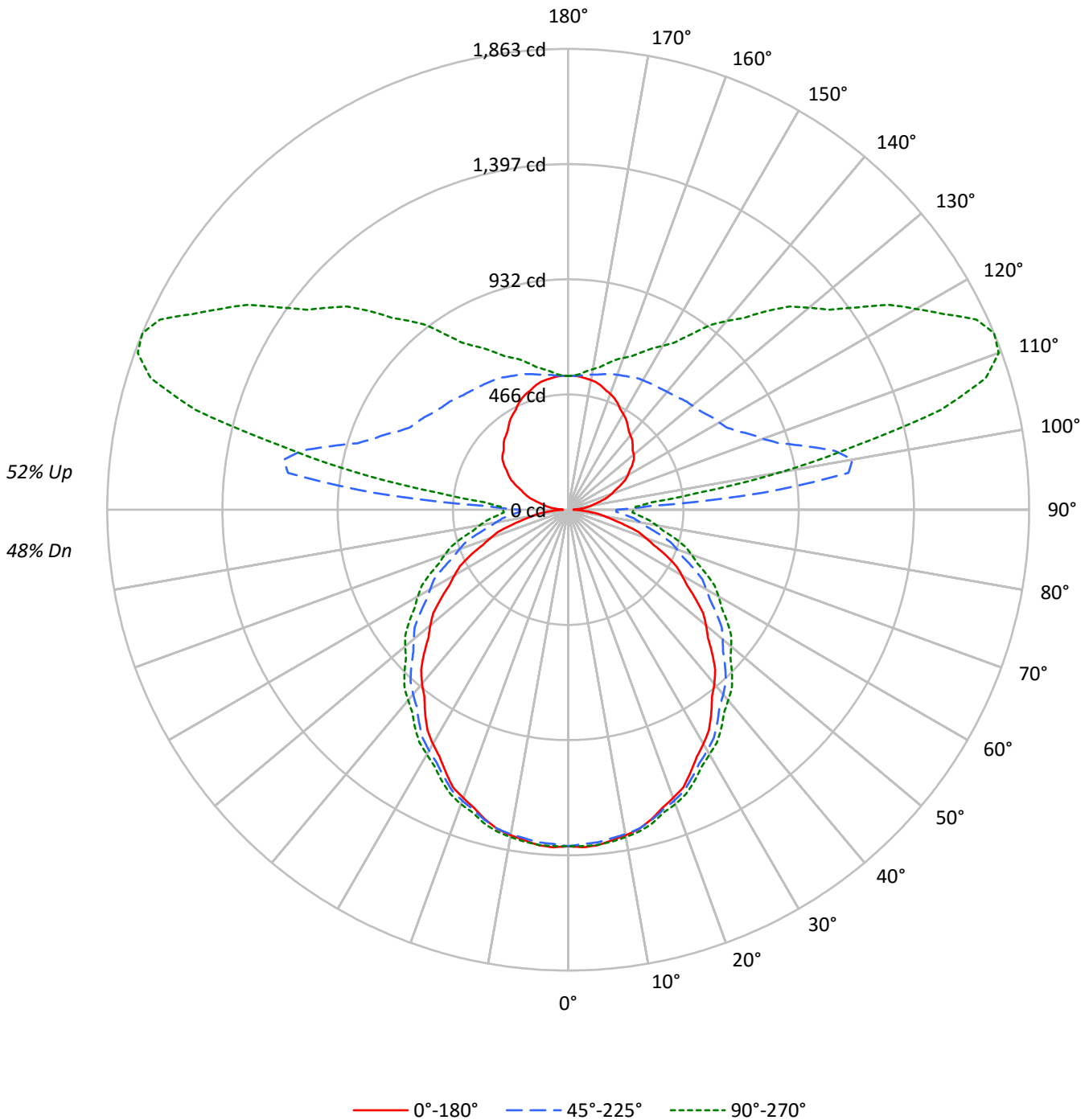
Input Watts (W): 71.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14640	14640	14640
5°	14685	14271	14279
10°	14553	13942	13872
15°	14366	13569	13429
20°	14098	13143	12941
25°	13767	12652	12427
30°	13428	12211	11906
35°	13049	11744	11491
40°	12686	11320	11046
45°	12284	10913	10690
50°	11887	10508	10298
55°	11448	10097	9946
60°	11021	9677	9585
65°	10584	9230	9154
70°	9925	8729	8713
75°	9088	8154	8264
80°	8133	7589	7753
85°	7242	7201	7456



TEST NUMBER: P332086-830

CATALOG NUMBER: S123DIP-S1165D1195U830-4F0-1E-UDD-D4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.9	1.5
10°-20°	367.5	4.3
20°-30°	549.7	6.4
30°-40°	656.5	7.6
40°-50°	686.9	7.9
50°-60°	644.6	7.5
60°-70°	538.3	6.2
70°-80°	385.2	4.5
80°-90°	233.9	2.7
90°-100°	445.2	5.1
100°-110°	958.4	11.1
110°-120°	909.3	10.5
120°-130°	709.3	8.2
130°-140°	545.5	6.3
140°-150°	397.5	4.6
150°-160°	274.4	3.2
160°-170°	161.2	1.9
170°-180°	52.4	0.6
0°-30°	1046.2	12.1
0°-40°	1702.7	19.7
0°-60°	3034.1	35.1
0°-90°	4191.5	48.5
90°-120°	2312.9	26.8
90°-150°	3965.2	45.9
90°-180°	4453.0	51.5
0°-180°	8644.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1360	1360	1360	1360	1360	
5°	1362	1358	1350	1361	1360	129
15°	1296	1300	1299	1313	1313	365
25°	1170	1185	1190	1208	1209	539
35°	1008	1031	1050	1072	1079	630
45°	824	859	896	924	936	635
55°	628	677	730	769	782	562
65°	434	492	557	600	616	429
75°	236	305	379	426	446	252
85°	73	147	225	274	290	76
90°	22	105	195	246	264	16
95°	54	196	796	380	334	53
105°	139	237	992	1691	1559	147
115°	232	307	752	1590	1820	230
125°	316	375	676	1216	1425	281
135°	369	439	638	981	1135	285
145°	419	478	612	781	864	262
155°	474	511	592	673	702	218
165°	518	533	567	602	612	146
175°	540	540	544	552	551	51
180°	541	541	541	541	541	



TEST NUMBER: P332086-830

CATALOG NUMBER: S123DIP-S1165D1195U830-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1
2.5°	1366.0	1365.3	1364.4	1363.7	1362.8	1361.4	1359.3	1357.2	1355.1	1353.0	1355.1
5°	1361.6	1360.9	1360.3	1359.6	1359.0	1357.6	1355.7	1353.7	1351.7	1349.7	1352.4
7.5°	1348.2	1348.4	1348.5	1348.7	1348.8	1347.9	1346.0	1344.1	1342.2	1340.2	1343.5
10°	1336.4	1337.1	1337.8	1338.4	1339.1	1338.5	1336.9	1335.2	1333.6	1331.9	1335.2
12.5°	1322.2	1323.0	1324.0	1324.9	1325.9	1325.8	1324.6	1323.5	1322.4	1321.3	1324.3
15°	1296.4	1297.4	1298.4	1299.4	1300.3	1300.7	1300.3	1300.0	1299.7	1299.4	1302.7
17.5°	1263.8	1265.7	1267.7	1269.7	1271.7	1272.6	1272.5	1272.3	1272.2	1272.1	1275.1
20°	1240.1	1242.1	1244.1	1246.0	1248.0	1249.3	1250.0	1250.7	1251.3	1252.0	1254.9
22.5°	1215.2	1217.2	1219.2	1221.2	1223.1	1224.6	1225.5	1226.4	1227.3	1228.2	1232.0
25°	1170.4	1173.7	1177.0	1180.3	1183.6	1185.7	1186.8	1187.7	1188.7	1189.7	1194.0
27.5°	1125.4	1129.2	1132.9	1136.7	1140.4	1143.4	1145.5	1147.5	1149.7	1151.8	1155.5
30°	1093.4	1097.7	1101.9	1106.3	1110.5	1114.0	1116.6	1119.3	1121.9	1124.5	1128.5
32.5°	1057.8	1062.6	1067.4	1072.2	1077.0	1081.2	1084.6	1088.1	1091.5	1094.9	1099.1
35°	1007.5	1012.8	1018.0	1023.3	1028.6	1033.3	1037.6	1041.9	1046.1	1050.5	1055.4
37.5°	954.1	960.1	966.0	971.9	977.9	983.4	988.7	994.0	999.3	1004.6	1010.1
40°	918.6	924.5	930.5	936.3	942.3	948.6	955.2	961.7	968.3	974.9	980.5
42.5°	879.5	886.7	894.0	901.2	908.4	915.5	922.4	929.2	936.0	942.9	949.0
45°	823.8	831.7	839.5	847.4	855.4	863.5	871.7	879.9	888.2	896.4	902.6
47.5°	765.3	774.3	783.3	792.3	801.3	810.4	819.8	829.2	838.7	848.1	855.1
50°	727.5	736.7	745.9	755.1	764.3	774.0	784.3	794.5	804.6	814.8	822.5
52.5°	687.2	696.9	706.6	716.4	726.1	736.7	747.9	759.1	770.4	781.7	789.6
55°	628.2	639.0	649.9	660.8	671.7	683.0	694.8	706.7	718.6	730.5	739.3
57.5°	570.7	582.0	593.3	604.6	616.0	628.2	641.1	654.1	667.0	680.0	689.0
60°	530.4	542.2	554.1	566.0	577.8	590.5	604.0	617.5	631.0	644.5	653.7
62.5°	492.5	504.6	516.7	528.9	540.9	554.1	568.4	582.7	597.0	611.3	620.5
65°	434.1	447.0	459.8	472.6	485.5	499.2	513.6	528.1	542.6	557.0	566.9
67.5°	374.8	388.5	402.1	415.8	429.3	443.6	458.3	473.1	487.8	502.6	513.3
70°	333.4	347.5	361.7	375.8	390.0	405.0	420.8	436.6	452.4	468.2	478.7
72.5°	295.4	309.6	323.8	337.9	352.0	367.3	383.6	399.9	416.3	432.6	443.5
75°	235.5	251.1	266.6	282.0	297.5	313.4	329.9	346.4	362.8	379.3	390.1
77.5°	183.4	199.1	214.6	230.3	245.8	261.9	278.5	295.1	311.7	328.3	339.8
80°	146.7	162.8	179.0	195.1	211.2	227.8	245.0	262.1	279.2	296.3	307.6
82.5°	114.7	131.1	147.5	163.9	180.2	197.2	214.5	232.0	249.3	266.6	277.9
85°	72.6	89.1	105.6	122.0	138.5	155.4	172.9	190.3	207.7	225.2	236.4
87.5°	39.9	56.6	73.5	90.6	107.4	124.4	141.9	159.3	176.8	194.3	205.2
90°	21.5	39.8	58.1	77.5	95.9	114.5	134.6	154.7	174.7	194.8	204.9
92.5°	31.7	52.8	76.5	99.6	123.4	155.1	200.4	263.9	326.7	326.4	295.9
95°	53.5	69.7	94.5	126.0	167.3	224.5	333.8	513.0	708.8	796.1	683.6
97.5°	78.0	90.7	111.7	139.5	179.2	238.8	343.2	542.5	857.3	1142.4	1222.5
100°	94.3	106.0	124.2	150.1	186.9	242.4	334.2	511.4	814.6	1165.9	1391.2
102.5°	111.6	123.0	139.3	163.2	196.4	247.8	331.4	483.8	755.2	1101.9	1392.6
105°	138.8	150.1	164.6	185.6	214.3	259.3	332.5	459.5	680.6	991.6	1315.0
107.5°	166.5	176.4	189.5	209.2	235.4	277.0	342.3	449.5	629.8	893.2	1187.3
110°	186.3	195.5	206.9	224.9	249.4	289.6	352.0	448.5	608.4	837.3	1107.6



TEST NUMBER: P332086-830

CATALOG NUMBER: S123DIP-S1165D1195U830-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	205.6	213.8	224.0	241.0	264.5	303.0	361.5	451.2	593.0	796.9	1036.2
115°	231.9	240.3	250.7	265.7	288.2	325.6	379.2	457.8	581.4	752.0	949.3
117.5°	259.4	266.9	274.8	287.3	310.6	344.7	397.0	467.7	573.7	720.6	892.3
120°	277.5	282.5	289.5	302.2	324.6	358.3	408.5	476.4	571.6	705.0	861.6
122.5°	294.2	298.3	304.6	317.4	338.1	372.9	421.7	484.7	572.2	693.0	835.2
125°	316.5	318.8	325.3	337.3	358.2	392.5	440.4	498.1	573.3	676.0	800.1
127.5°	334.7	337.7	345.4	357.4	380.0	413.4	458.4	509.6	576.6	663.2	768.0
130°	346.1	349.0	358.6	371.4	394.1	426.8	469.5	517.7	579.0	654.6	749.6
132.5°	353.6	357.8	368.4	384.2	407.1	438.4	478.9	524.9	579.7	647.8	732.0
135°	368.7	372.8	384.5	400.6	423.3	454.5	492.0	532.9	580.3	637.6	708.1
137.5°	382.9	387.2	398.8	416.0	438.6	466.8	501.5	539.0	580.0	628.1	687.4
140°	391.3	396.8	407.7	425.3	447.1	475.0	507.8	541.7	579.9	622.5	674.5
142.5°	401.8	406.1	417.7	433.3	454.9	480.5	511.5	543.8	578.5	616.0	662.2
145°	418.7	421.7	431.2	447.3	465.6	490.6	519.1	548.7	579.3	612.2	649.8
147.5°	434.3	436.3	445.9	460.1	478.2	499.5	525.7	552.1	579.3	608.0	638.8
150°	445.7	446.8	455.5	469.8	485.1	504.8	530.0	553.0	579.3	604.5	631.9
152.5°	457.1	457.3	466.1	478.5	492.1	511.0	532.6	554.8	576.6	600.1	624.9
155°	474.2	474.2	480.8	491.7	503.7	519.1	537.7	555.3	573.8	592.5	614.3
157.5°	487.8	488.6	493.9	503.5	513.8	525.7	540.5	556.3	570.1	585.7	602.5
160°	498.2	498.2	502.7	511.4	519.1	530.0	543.2	556.3	568.4	580.4	594.7
162.5°	506.1	506.1	509.6	516.7	523.5	532.6	544.0	555.4	564.9	575.1	586.7
165°	518.0	516.9	519.1	524.5	529.0	536.6	545.4	553.0	559.6	567.2	576.0
167.5°	527.0	525.7	526.7	530.9	534.0	538.8	545.2	551.3	554.3	559.4	565.7
170°	532.3	530.0	531.1	534.4	536.6	538.8	544.2	548.7	550.8	554.1	559.6
172.5°	535.7	534.4	534.6	537.1	538.4	539.7	544.2	547.8	548.2	549.7	553.5
175°	539.9	538.8	537.7	539.9	539.9	541.0	543.2	545.4	544.2	544.2	546.5
177.5°	541.9	541.0	540.1	541.0	541.0	541.0	541.9	543.6	541.9	541.0	541.9
180°	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0



TEST NUMBER: P332086-830

CATALOG NUMBER: S123DIP-S1165D1195U830-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1
2.5°	1357.2	1359.3	1361.4	1362.4	1362.1	1361.8	1361.5	1361.3
5°	1355.0	1357.6	1360.3	1361.4	1361.1	1360.7	1360.5	1360.1
7.5°	1346.8	1350.1	1353.4	1354.9	1354.4	1354.1	1353.7	1353.3
10°	1338.5	1341.8	1345.1	1346.4	1345.8	1345.1	1344.4	1343.8
12.5°	1327.4	1330.4	1333.4	1334.5	1333.9	1333.2	1332.6	1331.9
15°	1305.9	1309.2	1312.5	1314.0	1313.7	1313.3	1313.1	1312.7
17.5°	1278.0	1281.0	1283.9	1285.2	1284.8	1284.3	1283.8	1283.4
20°	1257.8	1260.8	1263.8	1265.5	1265.7	1266.1	1266.4	1266.8
22.5°	1235.8	1239.5	1243.2	1245.0	1244.8	1244.6	1244.4	1244.3
25°	1198.3	1202.6	1206.8	1209.0	1209.0	1209.0	1209.0	1209.0
27.5°	1159.1	1162.8	1166.5	1168.5	1168.8	1169.0	1169.3	1169.6
30°	1132.5	1136.4	1140.3	1142.3	1142.3	1142.3	1142.3	1142.3
32.5°	1103.3	1107.6	1111.7	1114.3	1115.0	1115.9	1116.6	1117.4
35°	1060.4	1065.3	1070.2	1073.4	1074.7	1076.0	1077.3	1078.6
37.5°	1015.7	1021.3	1026.9	1030.2	1031.3	1032.4	1033.4	1034.4
40°	986.1	991.6	997.3	1000.7	1002.0	1003.3	1004.7	1006.0
42.5°	955.2	961.3	967.4	971.4	973.2	975.1	976.9	978.7
45°	908.9	915.1	921.4	925.9	928.5	931.1	933.8	936.3
47.5°	862.1	869.2	876.3	880.8	882.8	884.9	886.9	888.9
50°	830.0	837.6	845.2	850.1	852.4	854.7	857.1	859.3
52.5°	797.4	805.2	813.0	818.4	821.2	824.1	826.9	829.7
55°	748.2	757.1	766.0	771.8	774.4	777.0	779.7	782.3
57.5°	698.0	706.9	715.9	721.9	725.0	728.1	731.2	734.2
60°	662.9	672.1	681.4	687.8	691.4	695.0	698.6	702.3
62.5°	629.7	638.9	648.2	654.5	657.8	661.2	664.6	667.9
65°	576.8	586.7	596.6	603.1	606.4	609.7	613.0	616.3
67.5°	524.1	535.0	545.7	552.5	555.3	558.1	560.8	563.6
70°	489.3	499.8	510.3	517.3	520.6	523.9	527.1	530.4
72.5°	454.2	465.1	475.8	482.9	486.2	489.5	492.8	496.1
75°	401.1	411.9	422.7	430.2	434.1	438.1	442.1	445.9
77.5°	351.2	362.7	374.2	381.4	384.5	387.5	390.5	393.5
80°	318.7	329.9	341.1	348.4	351.7	355.0	358.3	361.5
82.5°	289.1	300.3	311.4	318.7	322.0	325.3	328.6	331.9
85°	247.6	258.8	269.9	277.2	280.5	283.8	287.1	290.4
87.5°	216.6	228.0	239.4	247.1	250.2	253.7	257.2	260.3
90°	217.2	229.5	241.8	251.2	253.4	257.8	262.2	264.4
92.5°	272.0	263.9	266.3	267.6	268.6	268.3	272.5	273.5
95°	561.3	444.5	396.6	364.0	346.5	339.9	335.5	334.4
97.5°	1138.4	952.6	821.1	696.7	619.2	573.2	547.0	540.8
100°	1439.1	1360.0	1241.3	1092.3	985.0	908.3	868.9	873.3
102.5°	1534.0	1540.4	1475.0	1382.7	1300.0	1239.9	1207.6	1185.6
105°	1553.2	1671.9	1701.9	1679.5	1632.1	1593.5	1561.4	1558.9
107.5°	1455.8	1642.4	1747.1	1792.0	1795.7	1784.6	1775.8	1768.5
110°	1366.9	1577.0	1723.5	1805.7	1839.1	1850.5	1850.9	1851.3



TEST NUMBER: P332086-830

CATALOG NUMBER: S123DIP-S1165D1195U830-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1277.8	1492.0	1654.9	1759.1	1818.0	1848.0	1859.3	1862.7
115°	1159.9	1358.3	1527.2	1651.8	1736.5	1787.4	1811.9	1820.0
117.5°	1071.2	1243.5	1395.9	1522.2	1610.4	1668.1	1702.2	1712.3
120°	1023.5	1178.9	1318.0	1433.5	1522.3	1585.9	1614.5	1623.3
122.5°	984.7	1125.8	1254.9	1362.4	1441.6	1499.1	1530.3	1541.0
125°	931.8	1058.1	1170.2	1262.3	1334.7	1385.3	1414.9	1424.9
127.5°	884.5	997.5	1098.8	1182.9	1247.5	1291.0	1318.0	1327.2
130°	854.4	959.2	1054.1	1132.7	1192.8	1234.2	1259.1	1269.9
132.5°	826.0	922.7	1011.3	1086.4	1143.1	1184.8	1207.4	1215.8
135°	787.4	871.1	948.2	1014.5	1069.7	1104.2	1125.6	1134.9
137.5°	752.0	820.9	887.4	944.9	991.6	1026.6	1044.9	1051.6
140°	730.9	791.6	849.2	899.6	942.8	975.2	994.3	994.9
142.5°	710.2	762.6	812.6	856.6	893.6	922.5	939.9	940.5
145°	687.5	726.3	763.9	797.7	826.4	850.7	860.8	864.3
147.5°	669.1	698.6	727.6	751.2	773.2	789.9	799.5	801.5
150°	657.0	682.2	705.2	726.4	743.5	756.2	763.4	764.0
152.5°	647.4	669.1	689.5	706.8	719.9	731.2	735.3	735.4
155°	632.9	650.4	666.9	680.0	689.9	698.7	700.9	701.9
157.5°	617.6	632.4	645.0	655.3	663.8	670.4	672.1	671.9
160°	608.9	620.9	631.9	639.5	647.2	653.7	653.7	652.7
162.5°	598.3	608.7	618.7	625.5	630.6	636.2	636.2	635.2
165°	584.8	591.4	599.0	604.5	608.9	613.2	612.2	612.2
167.5°	573.0	578.0	582.4	586.4	588.2	591.4	590.2	590.2
170°	565.1	568.4	572.7	575.0	576.0	578.2	577.1	577.1
172.5°	558.1	560.4	564.0	565.2	565.5	567.7	565.7	564.9
175°	548.7	549.7	552.0	552.0	552.0	553.0	552.0	550.8
177.5°	542.7	543.6	544.5	544.5	543.6	544.5	542.7	542.7
180°	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0

(END OF REPORT)