

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: P332383-830

Luminaire Tested: **S123RDIP-S1165D1025U830-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332383-830
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: S123RDIP-S1165D1025U830-4F0-1E-UDD-F4
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1025 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7627.2 lumens
Efficiency: N/A
Efficacy: 114.2 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: General Diffuse

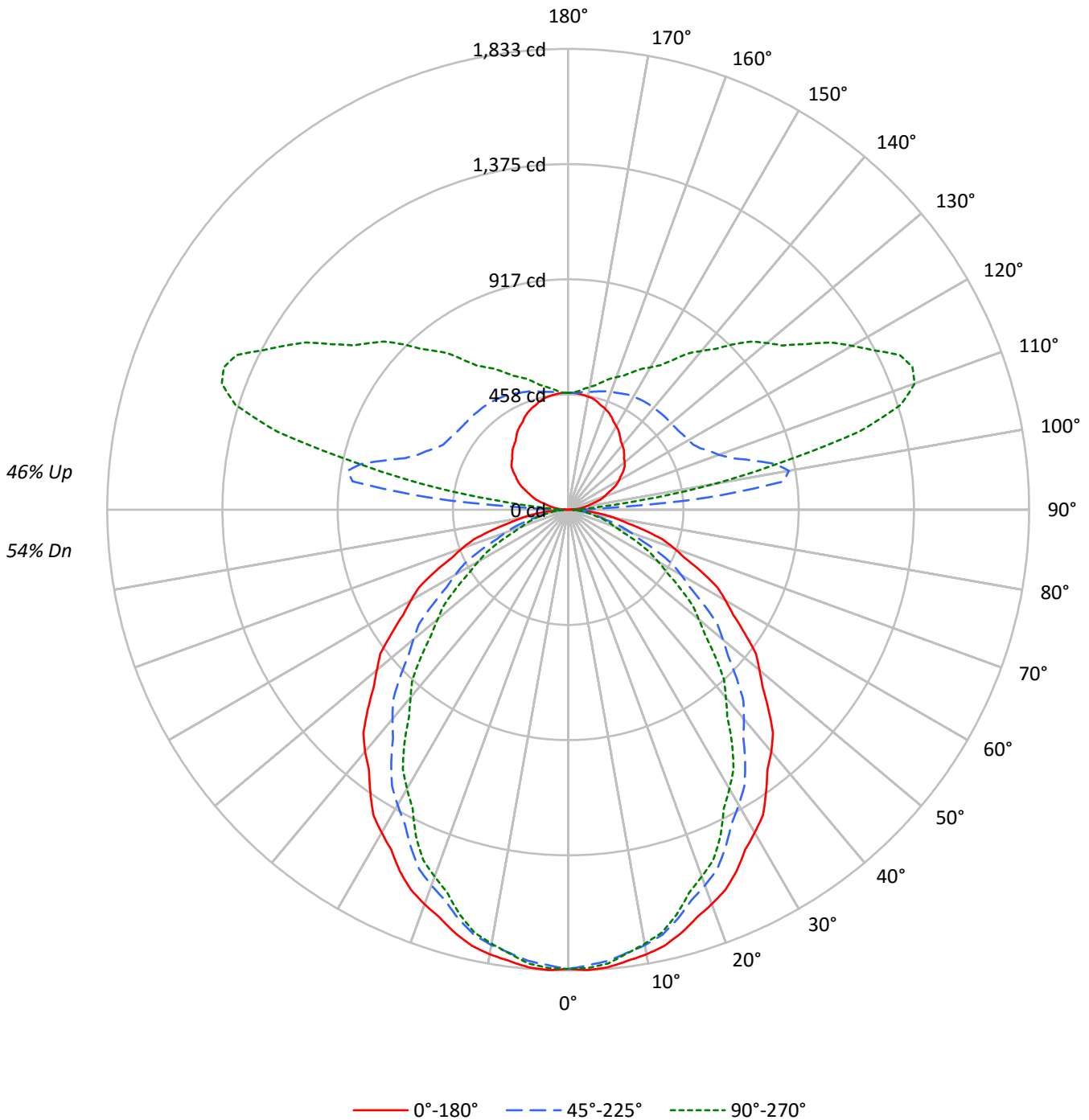
Input Watts (W): 66.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	108	108	108	100	100	100	100	86	86	86	72	72	72	60	60	60	54
1	99	95	91	88	92	88	85	82	76	73	71	64	62	61	54	52	51	46
2	90	83	77	72	84	77	72	68	67	63	59	57	54	51	48	46	44	39
3	83	73	66	61	77	68	62	57	59	54	50	50	47	44	42	40	38	34
4	76	65	57	51	70	61	54	49	53	47	43	45	41	38	38	35	33	29
5	70	58	50	44	65	55	47	42	47	42	37	41	36	33	34	31	29	26
6	64	52	44	39	60	49	42	37	43	37	33	37	32	29	31	28	25	23
7	60	47	40	34	55	45	37	32	39	33	29	34	29	26	29	25	23	20
8	55	43	35	30	51	41	34	29	36	30	26	31	26	23	26	23	20	18
9	52	40	32	27	48	37	30	26	33	27	23	28	24	21	24	21	19	16
10	48	36	29	24	45	34	28	23	30	25	21	26	22	19	23	19	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	19664	19664	19664
5°	19739	19466	19578
10°	19627	19223	19158
15°	19417	18773	18574
20°	19126	18211	17786
25°	18828	17579	17016
30°	18434	16850	15929
35°	18029	16119	14933
40°	17654	15260	13699
45°	17163	14411	12584
50°	16623	13447	11338
55°	16071	12344	10175
60°	15565	11164	8900
65°	14905	9885	7623
70°	14080	8299	6156
75°	12876	6529	5793
80°	11480	5783	5331
85°	9695	5125	4755



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	171.5	2.2
10°-20°	477.3	6.3
20°-30°	687.3	9.0
30°-40°	774.2	10.1
40°-50°	740.6	9.7
50°-60°	606.5	8.0
60°-70°	409.2	5.4
70°-80°	205.9	2.7
80°-90°	58.1	0.8
90°-100°	258.6	3.4
100°-110°	732.4	9.6
110°-120°	720.5	9.4
120°-130°	574.7	7.5
130°-140°	453.1	5.9
140°-150°	338.2	4.4
150°-160°	235.7	3.1
160°-170°	138.5	1.8
170°-180°	45.1	0.6
0°-30°	1336.1	17.5
0°-40°	2110.3	27.7
0°-60°	3457.4	45.3
0°-90°	4130.5	54.2
90°-120°	1711.5	22.4
90°-150°	3077.4	40.3
90°-180°	3497.0	45.8
0°-180°	7627.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1827	1827	1827	1827	1827	
5°	1827	1819	1802	1814	1812	173
15°	1742	1725	1685	1677	1667	491
25°	1585	1547	1480	1450	1433	729
35°	1372	1316	1227	1165	1136	858
45°	1128	1058	947	865	827	870
55°	856	781	658	575	542	768
65°	585	502	388	319	299	579
75°	310	238	157	143	139	330
85°	78	48	42	39	38	88
90°	2	11	24	26	27	6
95°	32	104	558	163	109	35
105°	109	161	756	1323	1197	116
115°	193	240	579	1269	1456	191
125°	268	317	540	978	1148	238
135°	314	375	532	806	930	243
145°	358	411	526	661	727	225
155°	407	439	509	579	603	187
165°	445	458	487	517	526	125
175°	464	464	468	474	473	44
180°	465	465	465	465	465	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8
2.5°	1832.8	1831.6	1830.6	1829.6	1828.5	1826.4	1823.3	1820.0	1816.9	1813.7	1816.7
5°	1826.8	1825.1	1823.5	1821.8	1820.2	1817.4	1813.5	1809.5	1805.5	1801.6	1804.6
7.5°	1809.9	1808.2	1806.4	1804.6	1802.8	1799.3	1794.2	1789.0	1784.0	1778.8	1780.5
10°	1795.7	1793.4	1791.1	1788.8	1786.5	1782.3	1776.4	1770.5	1764.5	1758.7	1759.0
12.5°	1775.6	1773.0	1770.4	1767.8	1765.3	1760.4	1753.1	1745.9	1738.6	1731.4	1731.2
15°	1742.4	1738.7	1735.1	1731.5	1727.9	1721.5	1712.2	1703.0	1693.7	1684.6	1682.9
17.5°	1700.5	1696.4	1692.1	1687.9	1683.8	1675.7	1664.1	1652.3	1640.6	1628.9	1625.4
20°	1669.7	1664.5	1659.3	1654.0	1648.7	1639.8	1627.3	1614.8	1602.2	1589.8	1585.5
22.5°	1635.4	1629.3	1623.2	1617.2	1611.2	1601.5	1588.2	1574.9	1561.6	1548.2	1542.9
25°	1585.3	1577.1	1568.9	1560.6	1552.4	1540.7	1525.5	1510.4	1495.2	1480.1	1473.2
27.5°	1524.6	1515.5	1506.4	1497.3	1488.2	1475.3	1458.4	1441.5	1424.7	1407.8	1398.2
30°	1483.1	1473.2	1463.3	1453.4	1443.6	1429.4	1411.0	1392.5	1374.1	1355.7	1344.4
32.5°	1441.6	1430.4	1419.2	1408.0	1396.8	1381.5	1362.0	1342.5	1323.0	1303.5	1291.3
35°	1372.0	1360.1	1348.2	1336.4	1324.6	1308.4	1288.0	1267.6	1247.2	1226.7	1212.6
37.5°	1301.5	1288.3	1275.1	1261.9	1248.8	1231.2	1209.5	1187.7	1165.9	1144.1	1128.0
40°	1256.4	1241.9	1227.4	1213.0	1198.4	1179.5	1156.1	1132.7	1109.4	1086.0	1068.8
42.5°	1205.4	1190.9	1176.5	1162.0	1147.5	1128.1	1104.0	1079.8	1055.6	1031.5	1012.8
45°	1127.5	1112.7	1097.9	1083.1	1068.2	1048.1	1022.8	997.4	972.0	946.7	927.9
47.5°	1049.5	1033.3	1017.0	1000.8	984.5	963.7	938.3	912.9	887.6	862.3	841.9
50°	992.7	977.2	961.7	946.2	930.8	909.7	883.1	856.4	829.7	803.0	782.6
52.5°	941.7	924.9	908.1	891.4	874.5	852.9	826.5	800.1	773.7	747.3	726.1
55°	856.4	840.2	824.1	807.9	791.8	769.8	741.8	713.8	685.8	657.8	638.8
57.5°	777.5	760.0	742.3	724.8	707.2	684.4	656.3	628.1	600.0	571.9	553.8
60°	723.0	704.9	686.8	668.7	650.5	627.8	600.5	573.3	545.9	518.6	500.8
62.5°	668.5	650.4	632.3	614.2	596.1	573.3	546.0	518.7	491.3	464.0	447.3
65°	585.2	567.1	549.0	530.9	512.8	490.9	465.2	439.5	413.9	388.1	372.0
67.5°	502.0	483.6	465.3	447.0	428.8	407.3	382.7	358.0	333.4	308.8	296.7
70°	447.4	429.7	411.9	394.1	376.4	355.9	332.9	309.8	286.8	263.7	252.2
72.5°	392.9	375.4	357.9	340.4	322.8	303.6	282.7	261.7	240.8	219.9	210.5
75°	309.6	293.9	278.1	262.2	246.5	229.5	211.4	193.2	175.1	157.0	153.7
77.5°	233.8	219.5	205.2	191.0	176.6	163.6	152.0	140.3	128.7	117.1	115.3
80°	185.2	171.7	158.2	144.7	131.2	121.0	114.0	107.2	100.3	93.3	92.4
82.5°	138.9	127.3	115.6	104.0	92.4	84.9	81.7	78.4	75.2	72.0	71.0
85°	78.5	71.3	64.0	56.8	49.6	45.4	44.5	43.5	42.5	41.5	40.8
87.5°	28.8	26.3	23.8	21.5	18.9	17.8	18.4	18.9	19.5	20.1	19.7
90°	1.9	3.8	5.7	8.5	10.4	12.3	15.1	17.9	20.7	23.6	22.6
92.5°	11.7	17.3	25.3	32.5	40.4	54.4	79.0	119.5	159.2	144.7	109.1
95°	32.0	34.8	45.1	61.2	85.6	122.3	202.3	342.4	496.7	557.9	452.5
97.5°	54.6	55.5	63.6	77.5	101.6	141.3	217.7	375.8	633.0	864.6	925.0
100°	69.7	70.6	77.2	90.3	112.9	149.6	215.5	354.7	602.1	891.0	1076.3
102.5°	85.4	87.1	92.9	105.4	125.7	159.4	218.5	336.6	556.9	842.1	1083.8
105°	109.1	112.0	117.6	128.9	146.8	176.0	226.8	323.7	501.4	756.4	1026.4
107.5°	134.3	137.1	142.6	153.7	170.5	197.6	242.1	322.7	466.1	680.8	926.0
110°	152.4	155.2	159.9	170.3	186.2	212.6	255.0	326.5	452.5	637.9	862.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	169.0	171.8	176.5	186.8	202.8	228.5	267.8	334.0	445.0	609.3	807.8
115°	192.8	196.6	202.3	211.7	227.7	253.1	288.8	346.2	442.1	578.6	741.4
117.5°	216.8	221.1	225.8	234.4	252.3	275.9	311.2	362.4	443.8	560.5	701.3
120°	233.3	236.1	240.8	250.2	268.2	291.6	325.6	374.5	446.9	552.2	680.2
122.5°	247.6	250.4	255.1	265.3	282.5	307.5	340.5	385.8	452.1	547.0	662.9
125°	268.2	270.0	275.7	286.0	303.9	329.3	362.2	403.6	460.1	540.1	640.7
127.5°	283.8	286.5	293.5	304.1	323.9	349.2	381.1	418.3	469.1	536.7	621.1
130°	293.5	296.3	304.8	316.1	335.8	361.3	392.3	428.1	475.1	534.4	610.6
132.5°	301.0	304.6	313.9	327.4	347.1	371.8	402.1	437.2	479.7	533.7	600.8
135°	314.2	318.0	328.4	342.4	362.2	387.6	416.8	448.7	486.4	532.5	588.1
137.5°	326.7	330.6	340.7	355.8	375.4	398.9	427.0	457.4	490.9	530.5	576.9
140°	335.0	339.6	349.0	364.1	383.0	406.4	433.8	461.9	493.9	529.7	570.1
142.5°	343.9	347.9	358.1	371.6	390.4	412.5	439.0	466.5	496.2	528.2	564.1
145°	358.4	361.3	369.8	383.9	399.8	421.5	445.9	471.4	497.7	525.9	556.0
147.5°	373.2	374.8	383.1	395.3	410.8	429.2	451.6	474.4	497.7	522.4	548.1
150°	383.0	383.9	391.3	403.6	416.8	433.8	455.3	475.1	497.7	519.3	542.8
152.5°	392.7	392.9	400.4	411.1	422.8	439.0	457.6	476.6	495.4	515.6	536.9
155°	407.4	407.4	413.0	422.4	432.8	445.9	461.9	477.0	492.9	509.0	527.8
157.5°	419.1	419.8	424.3	432.6	441.4	451.6	464.4	478.0	489.8	503.1	517.6
160°	428.1	428.1	431.9	439.3	445.9	455.3	466.7	478.0	488.3	498.6	510.9
162.5°	434.9	434.9	437.9	443.8	449.7	457.6	467.4	477.2	485.3	494.1	504.1
165°	445.0	444.0	445.9	450.6	454.4	461.0	468.5	475.1	480.8	487.4	494.8
167.5°	452.7	451.6	452.5	456.1	458.7	462.9	468.3	473.6	476.3	480.6	486.1
170°	457.2	455.3	456.3	459.1	461.0	462.9	467.6	471.4	473.3	476.1	480.8
172.5°	460.2	459.1	459.3	461.4	462.5	463.6	467.6	470.6	471.0	472.3	475.5
175°	463.8	462.9	461.9	463.8	463.8	464.8	466.7	468.5	467.6	467.6	469.5
177.5°	465.5	464.8	464.0	464.8	464.8	464.8	465.5	467.0	465.5	464.8	465.5
180°	464.8	464.8	464.8	464.8	464.8	464.8	464.8	464.8	464.8	464.8	464.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8
2.5°	1819.6	1822.5	1825.3	1826.6	1826.0	1825.5	1825.0	1824.4
5°	1807.5	1810.5	1813.5	1814.6	1813.9	1813.3	1812.6	1811.9
7.5°	1782.1	1783.8	1785.4	1785.6	1784.5	1783.4	1782.3	1781.1
10°	1759.3	1759.6	1760.0	1759.3	1757.7	1756.1	1754.4	1752.8
12.5°	1731.0	1730.8	1730.6	1729.6	1727.7	1725.7	1723.8	1721.9
15°	1681.3	1679.6	1678.0	1676.0	1673.7	1671.4	1669.1	1666.8
17.5°	1621.9	1618.3	1614.9	1611.5	1608.0	1604.6	1601.2	1597.7
20°	1581.2	1576.9	1572.6	1568.5	1564.5	1560.6	1556.7	1552.7
22.5°	1537.6	1532.3	1526.9	1522.4	1518.7	1515.0	1511.4	1507.7
25°	1466.3	1459.3	1452.5	1447.2	1443.6	1439.9	1436.3	1432.7
27.5°	1388.6	1378.9	1369.3	1361.8	1356.2	1350.8	1345.2	1339.6
30°	1333.2	1322.1	1310.9	1302.7	1297.4	1292.1	1286.9	1281.6
32.5°	1279.0	1266.8	1254.5	1245.7	1240.1	1234.5	1229.1	1223.5
35°	1198.4	1184.3	1170.2	1160.1	1154.1	1148.2	1142.3	1136.4
37.5°	1111.9	1095.9	1079.8	1068.1	1060.8	1053.5	1046.2	1038.9
40°	1051.8	1034.6	1017.6	1005.2	997.6	990.0	982.5	974.9
42.5°	994.1	975.3	956.7	944.0	937.2	930.4	923.6	916.8
45°	909.2	890.4	871.7	858.4	850.5	842.5	834.6	826.7
47.5°	821.4	801.1	780.6	766.9	759.9	752.8	745.7	738.8
50°	762.2	741.8	721.3	707.4	699.8	692.2	684.7	677.1
52.5°	704.9	683.7	662.5	648.5	641.7	635.0	628.2	621.4
55°	619.6	600.5	581.5	568.6	562.0	555.4	548.8	542.2
57.5°	535.8	517.7	499.7	487.9	482.3	476.7	471.1	465.5
60°	483.0	465.2	447.4	435.7	430.2	424.5	419.0	413.4
62.5°	430.6	413.9	397.1	385.9	379.9	374.1	368.3	362.4
65°	355.9	339.8	323.7	313.8	310.2	306.5	302.9	299.3
67.5°	284.6	272.6	260.5	252.6	248.7	244.8	240.9	237.0
70°	240.6	229.1	217.6	210.1	206.4	202.8	199.2	195.6
72.5°	201.0	191.6	182.2	176.7	175.2	173.7	172.2	170.7
75°	150.4	147.1	143.8	141.9	141.3	140.6	140.0	139.3
77.5°	113.5	111.7	109.9	108.7	108.0	107.4	106.7	106.0
80°	91.3	90.4	89.4	88.6	87.9	87.3	86.6	86.0
82.5°	70.0	69.1	68.1	67.5	67.4	67.2	67.1	67.0
85°	40.2	39.5	38.8	38.5	38.5	38.5	38.5	38.5
87.5°	19.6	19.5	19.4	19.5	19.1	19.0	18.9	18.5
90°	23.6	24.5	25.4	27.2	26.3	27.2	28.2	27.2
92.5°	79.2	62.9	55.5	50.6	48.9	46.1	47.0	45.3
95°	338.7	229.6	179.7	145.8	128.0	119.5	112.9	109.1
97.5°	844.3	676.3	554.9	442.3	373.0	330.6	305.2	297.1
100°	1109.3	1033.0	922.9	789.4	694.4	625.7	589.0	589.9
102.5°	1197.3	1194.9	1130.7	1046.0	972.0	917.7	887.0	865.3
105°	1223.0	1317.2	1335.0	1310.6	1267.2	1231.5	1201.5	1196.7
107.5°	1149.0	1301.7	1384.1	1417.7	1418.4	1406.4	1396.2	1387.5
110°	1078.2	1251.3	1369.8	1435.7	1462.1	1469.6	1467.7	1465.8



TEST NUMBER: P332383-830

CATALOG NUMBER: S123RDIP-S1165D1025U830-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1008.1	1185.1	1317.9	1402.6	1450.8	1474.0	1481.2	1481.6
115°	915.4	1079.1	1217.4	1319.9	1390.5	1431.9	1450.8	1455.5
117.5°	848.3	989.6	1113.7	1217.8	1291.4	1338.8	1365.9	1372.2
120°	812.8	939.9	1052.8	1147.8	1222.1	1274.8	1297.4	1303.1
122.5°	785.0	900.0	1004.7	1092.9	1159.0	1206.4	1231.1	1238.3
125°	748.0	850.6	940.8	1016.1	1076.3	1117.7	1141.2	1147.8
127.5°	715.6	807.0	888.5	957.0	1010.6	1046.0	1067.2	1073.3
130°	695.3	780.0	856.1	920.1	970.0	1003.9	1023.6	1031.1
132.5°	676.5	754.3	825.3	886.3	933.1	967.0	984.5	989.8
135°	651.0	717.8	779.0	832.6	878.7	906.9	923.9	930.5
137.5°	627.9	682.7	735.4	781.8	820.6	849.2	863.5	867.8
140°	614.3	662.3	707.5	748.0	783.7	810.0	825.1	824.2
142.5°	601.5	642.8	681.9	717.1	747.6	770.9	784.5	783.5
145°	586.2	617.2	647.2	674.6	698.0	717.8	725.4	727.3
147.5°	573.5	598.1	622.5	641.9	659.7	673.1	680.2	681.0
150°	564.5	586.2	605.9	623.8	637.9	648.2	653.8	653.8
152.5°	556.2	574.9	592.4	607.2	618.3	627.9	631.3	631.3
155°	543.8	558.8	573.0	584.3	592.8	600.2	602.1	603.0
157.5°	530.7	543.2	554.1	563.0	570.3	576.0	577.5	577.3
160°	523.1	533.5	542.8	549.4	556.0	561.7	561.7	560.7
162.5°	514.1	522.9	531.6	537.4	541.8	546.6	546.6	545.6
165°	502.4	508.0	514.6	519.3	523.1	526.9	525.9	525.9
167.5°	492.2	496.5	500.3	503.7	505.4	508.0	507.1	507.1
170°	485.5	488.3	492.0	493.9	494.8	496.7	495.8	495.8
172.5°	479.5	481.5	484.6	485.7	485.9	487.8	486.1	485.3
175°	471.4	472.3	474.2	474.2	474.2	475.1	474.2	473.3
177.5°	466.3	467.0	467.8	467.8	467.0	467.8	466.3	466.3
180°	464.8	464.8	464.8	464.8	464.8	464.8	464.8	464.8

(END OF REPORT)