

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: P332389-830

Luminaire Tested: **S123RDIP-S1165D1195U830-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332389-830
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-S1165D1195U830-4F0-1E-UDD-F4
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1195 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8201.1 lumens
Efficiency: N/A
Efficacy: 114.4 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

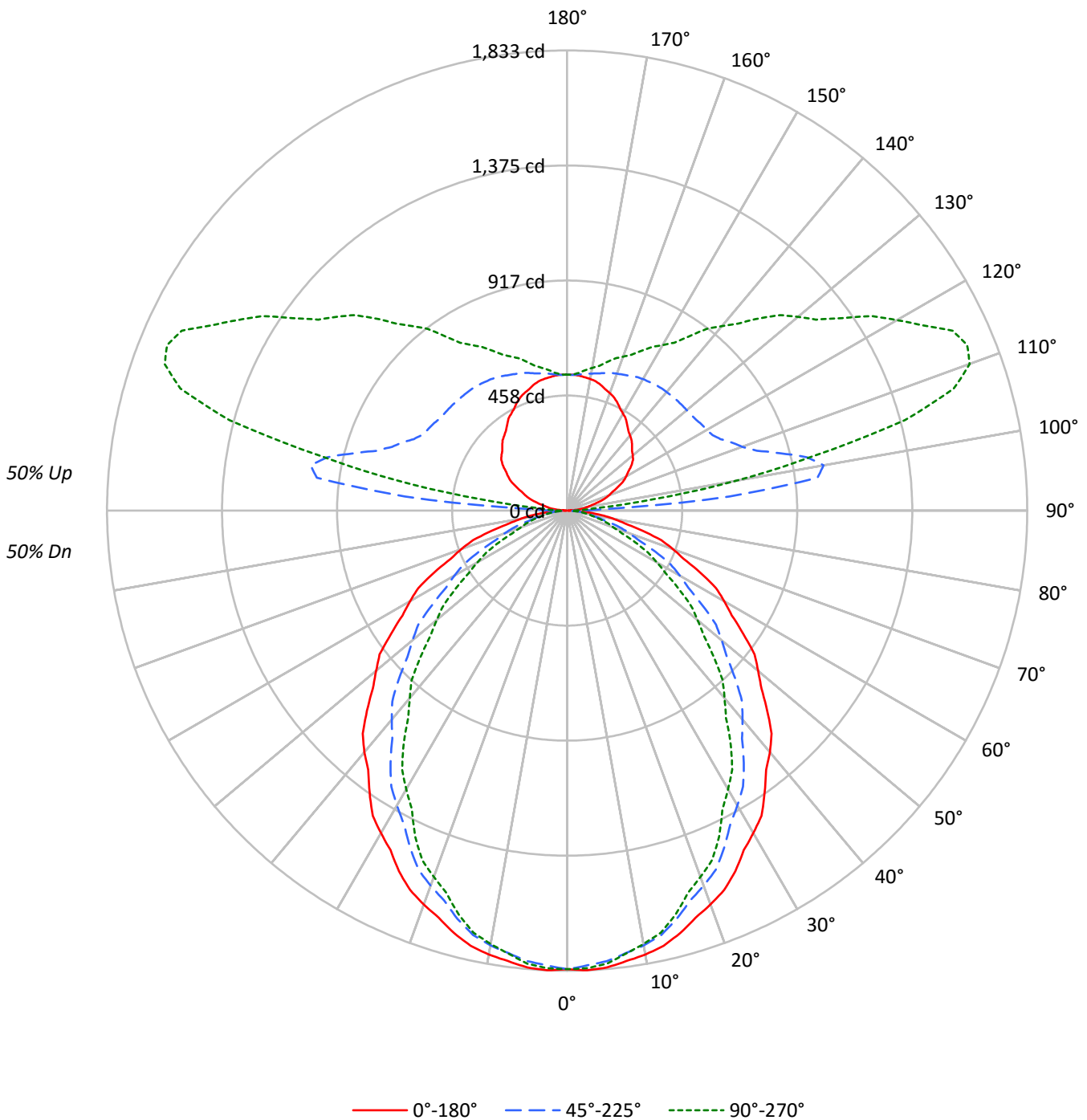
Input Watts (W): 71.7
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	99	99	99	99	84	84	84	69	69	69	56	56	56	50
1	98	94	90	87	91	87	84	81	74	71	69	62	60	58	50	49	48	43
2	90	82	76	71	83	76	71	67	65	61	58	54	52	49	45	43	41	37
3	82	73	66	60	75	67	61	56	58	53	49	48	45	42	40	37	35	31
4	75	65	57	51	69	60	53	48	51	46	42	43	39	36	36	33	31	27
5	69	58	50	44	64	54	47	41	46	41	36	39	35	32	32	29	27	24
6	64	52	44	38	59	48	41	36	42	36	32	35	31	28	30	26	24	21
7	59	47	39	34	54	44	37	32	38	32	28	32	28	25	27	24	21	19
8	55	43	35	30	51	40	33	28	35	29	25	30	25	22	25	22	19	17
9	51	39	32	27	47	36	30	25	32	26	23	27	23	20	23	20	17	15
10	48	36	29	24	44	34	27	23	29	24	20	25	21	18	21	18	16	14

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	2.1
10°-20°	477.3	5.8
20°-30°	687.3	8.4
30°-40°	774.2	9.4
40°-50°	740.6	9.0
50°-60°	606.5	7.4
60°-70°	409.2	5.0
70°-80°	205.9	2.5
80°-90°	58.7	0.7
90°-100°	301.1	3.7
100°-110°	852.5	10.4
110°-120°	838.6	10.2
120°-130°	668.9	8.2
130°-140°	527.4	6.4
140°-150°	393.6	4.8
150°-160°	274.4	3.3
160°-170°	161.2	2.0
170°-180°	52.4	0.6
0°-30°	1336.1	16.3
0°-40°	2110.3	25.7
0°-60°	3457.4	42.2
0°-90°	4131.1	50.4
90°-120°	1992.1	24.3
90°-150°	3582.0	43.7
90°-180°	4070.0	49.6
0°-180°	8201.1	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	13	27	31	32	6
95°	37	121	649	190	127	40
105°	127	188	880	1540	1393	135
115°	224	280	673	1477	1694	222
125°	312	368	629	1139	1336	277
135°	366	436	620	938	1083	283
145°	417	478	612	769	846	261
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: P332389-830

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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	26.4	23.9	21.8	19.2	18.3	18.9	19.6	20.3	20.9	20.4
90°	2.2	4.3	6.6	9.9	12.1	14.2	17.5	20.8	24.1	27.3	26.3
92.5°	13.6	20.2	29.3	37.9	47.1	63.3	92.0	139.1	185.3	168.4	127.1
95°	37.2	40.5	52.6	71.2	99.6	142.3	235.4	398.6	578.2	649.4	526.7
97.5°	63.5	64.6	74.0	90.2	118.3	164.5	253.4	437.3	736.8	1006.4	1076.7
100°	81.1	82.1	89.8	105.1	131.4	174.1	250.8	412.8	700.9	1037.1	1252.8
102.5°	99.4	101.4	108.2	122.6	146.3	185.5	254.3	391.8	648.3	980.1	1261.5
105°	127.1	130.4	136.9	150.1	170.8	204.8	263.9	376.7	583.7	880.4	1194.8
107.5°	156.4	159.7	166.0	178.9	198.4	230.0	281.9	375.6	542.5	792.4	1077.8
110°	177.4	180.7	186.2	198.2	216.8	247.5	296.8	380.0	526.7	742.4	1004.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	196.7	200.0	205.5	217.4	236.1	265.9	311.7	388.8	518.0	709.2	940.3
115°	224.5	228.8	235.4	246.4	265.0	294.5	336.2	403.0	514.7	673.4	862.9
117.5°	252.3	257.3	262.8	272.9	293.7	321.1	362.2	421.8	516.7	652.4	816.2
120°	271.5	274.8	280.3	291.3	312.1	339.5	378.9	435.8	520.2	642.8	791.7
122.5°	288.2	291.5	297.0	308.8	328.8	357.9	396.4	449.0	526.3	636.7	771.6
125°	312.1	314.3	320.8	332.9	353.7	383.2	421.6	469.8	535.5	628.6	745.7
127.5°	330.3	333.6	341.7	353.9	376.9	406.5	443.5	486.9	546.0	624.6	723.0
130°	341.7	345.0	354.8	368.0	391.0	420.5	456.7	498.2	553.0	622.0	710.7
132.5°	350.4	354.6	365.3	381.1	404.1	432.8	468.1	508.8	558.3	621.1	699.4
135°	365.8	370.1	382.2	398.6	421.6	451.2	485.1	522.4	566.2	619.8	684.5
137.5°	380.2	384.8	396.6	414.2	437.0	464.3	496.9	532.4	571.5	617.4	671.5
140°	389.8	395.3	406.2	423.8	445.7	473.1	504.8	537.7	575.0	616.5	663.6
142.5°	400.4	405.0	416.8	432.5	454.5	480.1	511.0	542.9	577.6	614.8	656.6
145°	417.3	420.5	430.4	446.8	465.4	490.6	519.1	548.7	579.3	612.2	647.2
147.5°	434.3	436.3	445.9	460.1	478.2	499.5	525.7	552.1	579.3	608.0	638.0
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



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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°	20.4	20.4	20.3	20.5	20.0	19.9	19.9	19.4
90°	27.3	28.5	29.6	31.8	30.6	31.8	32.9	31.8
92.5°	92.2	73.1	64.6	58.9	56.9	53.6	54.8	52.8
95°	394.3	267.2	209.2	169.8	148.9	139.1	131.4	127.1
97.5°	982.7	787.1	645.9	514.9	434.1	384.8	355.2	345.8
100°	1291.1	1202.4	1074.3	918.8	808.1	728.2	685.5	686.6
102.5°	1393.6	1390.7	1316.1	1217.5	1131.4	1068.2	1032.5	1007.3
105°	1423.6	1533.1	1554.0	1525.5	1475.1	1433.5	1398.5	1393.0
107.5°	1337.3	1515.1	1611.1	1650.1	1651.0	1636.9	1625.1	1615.0
110°	1255.0	1456.5	1594.5	1671.1	1701.8	1710.5	1708.4	1706.2



TEST NUMBER: P332389-830

CATALOG NUMBER: S123RDIP-S1165D1195U830-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1173.5	1379.4	1534.0	1632.6	1688.7	1715.8	1724.1	1724.6
115°	1065.5	1256.0	1417.0	1536.4	1618.5	1666.7	1688.7	1694.1
117.5°	987.3	1151.8	1296.4	1417.5	1503.2	1558.3	1589.9	1597.3
120°	946.1	1094.0	1225.4	1336.1	1422.5	1483.8	1510.1	1516.7
122.5°	913.7	1047.5	1169.3	1272.1	1349.0	1404.1	1433.0	1441.3
125°	870.6	990.0	1095.0	1182.7	1252.8	1301.0	1328.3	1336.1
127.5°	832.9	939.3	1034.2	1113.9	1176.4	1217.5	1242.3	1249.2
130°	809.3	907.9	996.6	1071.0	1129.1	1168.5	1191.5	1200.2
132.5°	787.4	878.1	960.6	1031.6	1086.1	1125.5	1145.9	1152.1
135°	757.8	835.6	906.7	969.1	1022.8	1055.6	1075.3	1083.1
137.5°	730.8	794.6	855.9	910.0	955.2	988.4	1005.0	1010.1
140°	715.1	770.9	823.5	870.6	912.2	942.9	960.4	959.3
142.5°	700.2	748.2	793.7	834.7	870.2	897.3	913.0	912.0
145°	682.2	718.4	753.5	785.1	812.6	835.6	844.3	846.5
147.5°	667.6	696.3	724.5	747.1	767.9	783.4	791.7	792.6
150°	657.0	682.2	705.2	726.0	742.4	754.5	761.1	761.1
152.5°	647.4	669.1	689.5	706.8	719.7	730.8	734.8	734.8
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)