

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: P332365-830

Luminaire Tested: **S123RDIP-S1165D365U830-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332365-830
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-S1165D365U830-4F0-1E-UDD-F4
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5366.1 lumens
Efficiency: N/A
Efficacy: 107.8 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: Semi-Direct

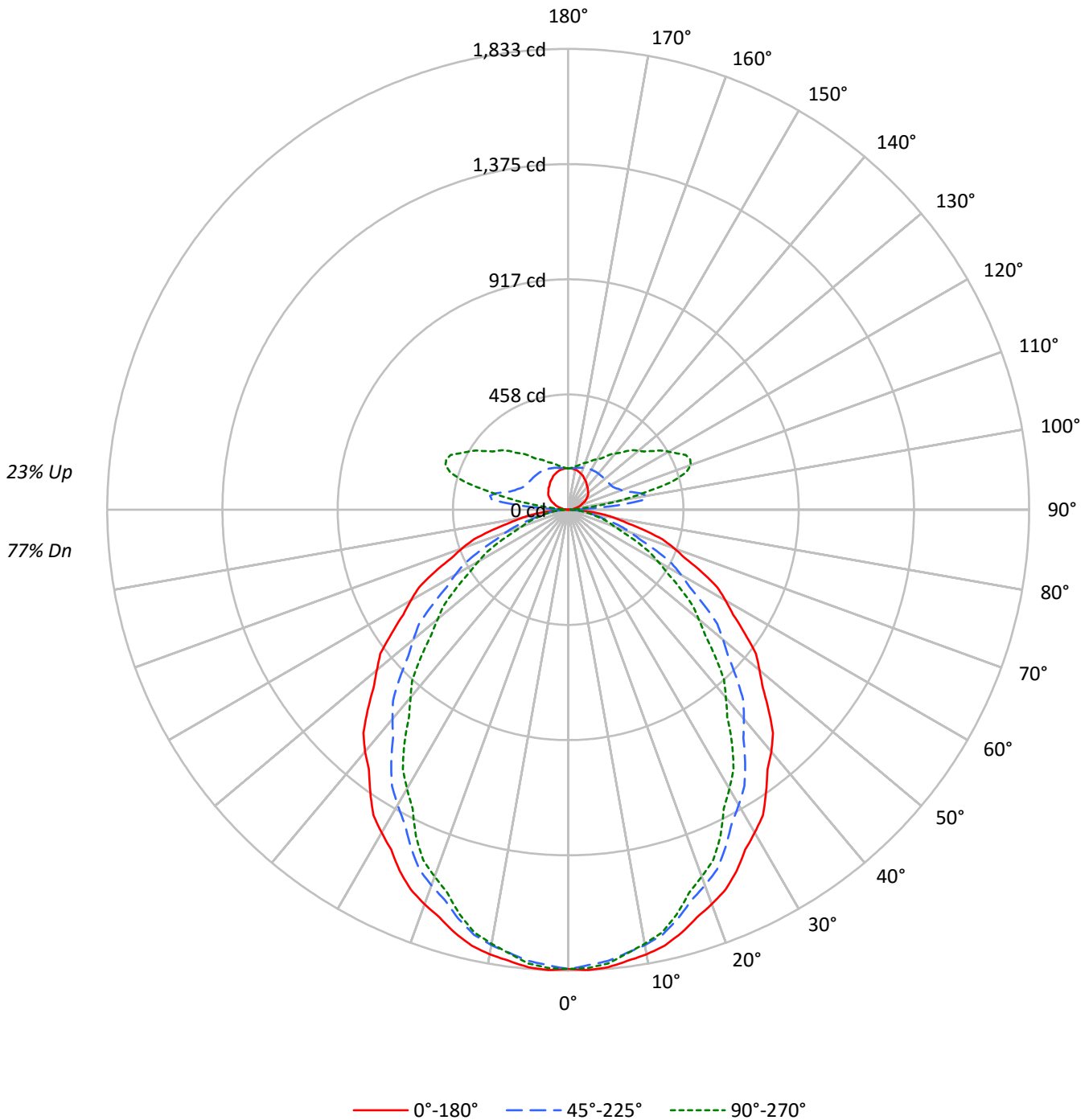
Input Watts (W): 49.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	114	114	114	114	108	108	108	108	98	98	98	89	89	89	81	81	81	77
1	104	100	96	93	99	96	92	89	87	84	82	79	77	76	72	71	69	66
2	95	88	82	77	91	84	79	74	77	73	69	70	67	64	64	62	59	56
3	87	78	70	64	83	75	68	62	68	63	58	63	58	55	57	54	51	48
4	80	69	61	55	76	66	59	53	61	55	50	56	51	47	52	48	44	42
5	74	62	54	48	70	60	52	46	55	49	44	51	45	41	47	42	39	36
6	68	56	48	42	65	54	46	41	50	43	39	46	41	37	43	38	35	32
7	64	51	43	37	60	49	42	36	45	39	34	42	37	33	39	34	31	29
8	59	47	39	33	56	45	37	32	42	35	31	39	33	29	36	31	28	26
9	55	43	35	30	53	41	34	29	38	32	28	36	30	27	33	29	25	23
10	52	39	32	27	49	38	31	26	36	30	25	33	28	24	31	26	23	21

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	3.2
10°-20°	477.3	8.9
20°-30°	687.3	12.8
30°-40°	774.2	14.4
40°-50°	740.6	13.8
50°-60°	606.5	11.3
60°-70°	409.2	7.6
70°-80°	205.9	3.8
80°-90°	55.7	1.0
90°-100°	91.6	1.7
100°-110°	259.3	4.8
110°-120°	255.1	4.8
120°-130°	203.5	3.8
130°-140°	160.4	3.0
140°-150°	119.7	2.2
150°-160°	83.4	1.6
160°-170°	49.0	0.9
170°-180°	16.0	0.3
0°-30°	1336.1	24.9
0°-40°	2110.3	39.3
0°-60°	3457.4	64.4
0°-90°	4128.2	76.9
90°-120°	605.9	11.3
90°-150°	1089.5	20.3
90°-180°	1238.0	23.1
0°-180°	5366.1	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°	1	4	8	9	10	5
95°	11	37	198	58	39	12
105°	39	57	268	468	424	41
115°	68	85	205	449	515	68
125°	95	112	191	346	406	84
135°	111	133	188	285	329	86
145°	127	145	186	234	258	80
155°	144	156	180	205	214	66
165°	158	162	173	183	186	44
175°	164	164	166	168	168	16
180°	165	165	165	165	165	



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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°	28.6	25.8	23.1	20.4	17.6	16.3	16.5	16.7	16.9	17.1	16.8
90°	0.7	1.3	2.0	3.0	3.7	4.3	5.4	6.3	7.4	8.3	8.0
92.5°	4.1	6.1	9.0	11.5	14.3	19.2	28.0	42.3	56.4	51.2	38.6
95°	11.3	12.3	16.0	21.7	30.3	43.3	71.6	121.2	175.9	197.6	160.2
97.5°	19.3	19.6	22.5	27.4	36.0	50.0	77.1	133.0	224.1	306.1	327.4
100°	24.7	25.0	27.3	32.0	40.0	53.0	76.3	125.5	213.2	315.5	381.1
102.5°	30.3	30.8	32.9	37.3	44.5	56.5	77.4	119.1	197.2	298.1	383.7
105°	38.6	39.7	41.7	45.6	51.9	62.3	80.3	114.6	177.6	267.8	363.4
107.5°	47.6	48.5	50.5	54.4	60.3	69.9	85.8	114.2	165.0	241.0	327.8
110°	53.9	55.0	56.6	60.3	66.0	75.3	90.3	115.6	160.2	225.8	305.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	59.9	60.8	62.5	66.2	71.8	80.9	94.8	118.3	157.5	215.7	286.0
115°	68.2	69.7	71.6	74.9	80.6	89.6	102.3	122.5	156.6	204.8	262.5
117.5°	76.7	78.2	79.9	83.0	89.4	97.6	110.2	128.3	157.1	198.4	248.3
120°	82.6	83.6	85.3	88.6	94.9	103.2	115.3	132.5	158.3	195.5	240.8
122.5°	87.7	88.7	90.3	94.0	100.0	108.9	120.6	136.6	160.0	193.7	234.7
125°	94.9	95.6	97.6	101.2	107.5	116.6	128.3	142.9	162.9	191.1	226.9
127.5°	100.5	101.4	104.0	107.6	114.6	123.7	134.9	148.1	166.1	190.0	219.9
130°	104.0	104.9	107.9	111.9	118.9	127.9	138.9	151.6	168.2	189.2	216.1
132.5°	106.6	107.8	111.1	115.9	122.9	131.7	142.3	154.8	169.8	188.9	212.7
135°	111.2	112.5	116.2	121.2	128.3	137.2	147.5	158.9	172.2	188.5	208.2
137.5°	115.6	117.1	120.6	125.9	132.9	141.2	151.2	161.9	173.8	187.8	204.2
140°	118.6	120.3	123.6	128.9	135.5	143.9	153.5	163.5	174.8	187.6	201.8
142.5°	121.8	123.2	126.8	131.6	138.3	146.0	155.4	165.1	175.7	187.0	199.7
145°	126.9	127.9	130.9	135.9	141.6	149.2	157.9	166.8	176.2	186.2	196.8
147.5°	132.1	132.7	135.6	140.0	145.4	151.9	159.9	168.0	176.2	184.9	194.1
150°	135.5	135.9	138.6	142.9	147.5	153.5	161.2	168.2	176.2	183.9	192.2
152.5°	139.0	139.1	141.8	145.5	149.7	155.4	162.0	168.7	175.4	182.6	190.0
155°	144.2	144.2	146.2	149.6	153.3	157.9	163.5	168.9	174.6	180.2	186.8
157.5°	148.4	148.6	150.2	153.2	156.3	159.9	164.4	169.2	173.4	178.1	183.2
160°	151.6	151.6	152.9	155.5	157.9	161.2	165.2	169.2	172.9	176.5	180.9
162.5°	153.9	153.9	155.0	157.1	159.2	162.0	165.5	168.9	171.8	174.9	178.4
165°	157.5	157.2	157.9	159.6	160.9	163.2	165.9	168.2	170.2	172.6	175.2
167.5°	160.2	159.9	160.2	161.5	162.4	163.9	165.8	167.7	168.6	170.1	172.1
170°	161.8	161.2	161.6	162.5	163.2	163.9	165.5	166.8	167.6	168.5	170.2
172.5°	163.0	162.5	162.6	163.3	163.7	164.1	165.5	166.6	166.7	167.2	168.3
175°	164.2	163.9	163.5	164.2	164.2	164.6	165.2	165.9	165.5	165.5	166.2
177.5°	164.9	164.6	164.3	164.6	164.6	164.6	164.9	165.3	164.9	164.6	164.9
180°	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6



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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°	16.6	16.3	16.1	16.0	15.7	15.5	15.3	15.0
90°	8.3	8.7	9.0	9.6	9.3	9.6	10.0	9.6
92.5°	28.1	22.2	19.6	17.9	17.3	16.3	16.7	16.0
95°	119.9	81.2	63.6	51.7	45.3	42.3	40.0	38.6
97.5°	298.9	239.4	196.4	156.7	132.1	117.1	108.0	105.2
100°	392.7	365.7	326.8	279.5	245.8	221.5	208.5	208.9
102.5°	423.9	423.0	400.3	370.3	344.1	324.9	314.1	306.3
105°	433.0	466.3	472.6	464.0	448.7	436.0	425.4	423.7
107.5°	406.7	460.8	490.0	501.9	502.2	497.9	494.3	491.3
110°	381.7	443.0	484.9	508.3	517.6	520.3	519.6	519.0



TEST NUMBER: P332365-830

CATALOG NUMBER: S123RDIP-S1165D365U830-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	356.9	419.5	466.6	496.5	513.6	521.9	524.4	524.5
115°	324.0	382.0	431.0	467.3	492.3	506.9	513.6	515.3
117.5°	300.3	350.3	394.3	431.1	457.2	474.0	483.5	485.8
120°	287.8	332.7	372.7	406.3	432.6	451.3	459.3	461.3
122.5°	278.0	318.6	355.6	386.9	410.3	427.1	435.8	438.4
125°	264.8	301.1	333.1	359.8	381.1	395.7	404.1	406.3
127.5°	253.4	285.7	314.5	338.8	357.8	370.3	377.9	379.9
130°	246.1	276.2	303.1	325.7	343.4	355.4	362.4	365.0
132.5°	239.5	267.0	292.2	313.8	330.4	342.3	348.6	350.4
135°	230.5	254.1	275.8	294.7	311.1	321.1	327.1	329.4
137.5°	222.3	241.7	260.3	276.8	290.5	300.7	305.7	307.3
140°	217.5	234.5	250.4	264.8	277.5	286.8	292.1	291.8
142.5°	213.0	227.5	241.4	253.8	264.7	273.0	277.7	277.4
145°	207.5	218.5	229.1	238.8	247.1	254.1	256.8	257.5
147.5°	203.0	211.8	220.4	227.2	233.6	238.3	240.8	241.1
150°	199.8	207.5	214.5	220.8	225.8	229.5	231.5	231.5
152.5°	196.9	203.5	209.7	215.0	218.9	222.3	223.5	223.5
155°	192.6	197.8	202.8	206.8	209.8	212.5	213.2	213.5
157.5°	187.8	192.3	196.1	199.3	201.9	203.9	204.4	204.3
160°	185.2	188.9	192.2	194.5	196.8	198.9	198.9	198.5
162.5°	182.0	185.1	188.2	190.3	191.8	193.5	193.5	193.2
165°	177.9	179.8	182.2	183.9	185.2	186.5	186.2	186.2
167.5°	174.3	175.8	177.1	178.3	178.9	179.8	179.6	179.6
170°	171.8	172.9	174.2	174.8	175.2	175.9	175.5	175.5
172.5°	169.8	170.5	171.5	171.9	172.0	172.7	172.1	171.8
175°	166.8	167.2	167.9	167.9	167.9	168.2	167.9	167.6
177.5°	165.0	165.3	165.6	165.6	165.3	165.6	165.0	165.0
180°	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6

(END OF REPORT)