

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: P332364-927

Luminaire Tested: **S123RDIP-S1165D365U927-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332364-927
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDIP-S1165D365U927-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 365 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4457.0 lumens
Efficiency: N/A
Efficacy: 89.5 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

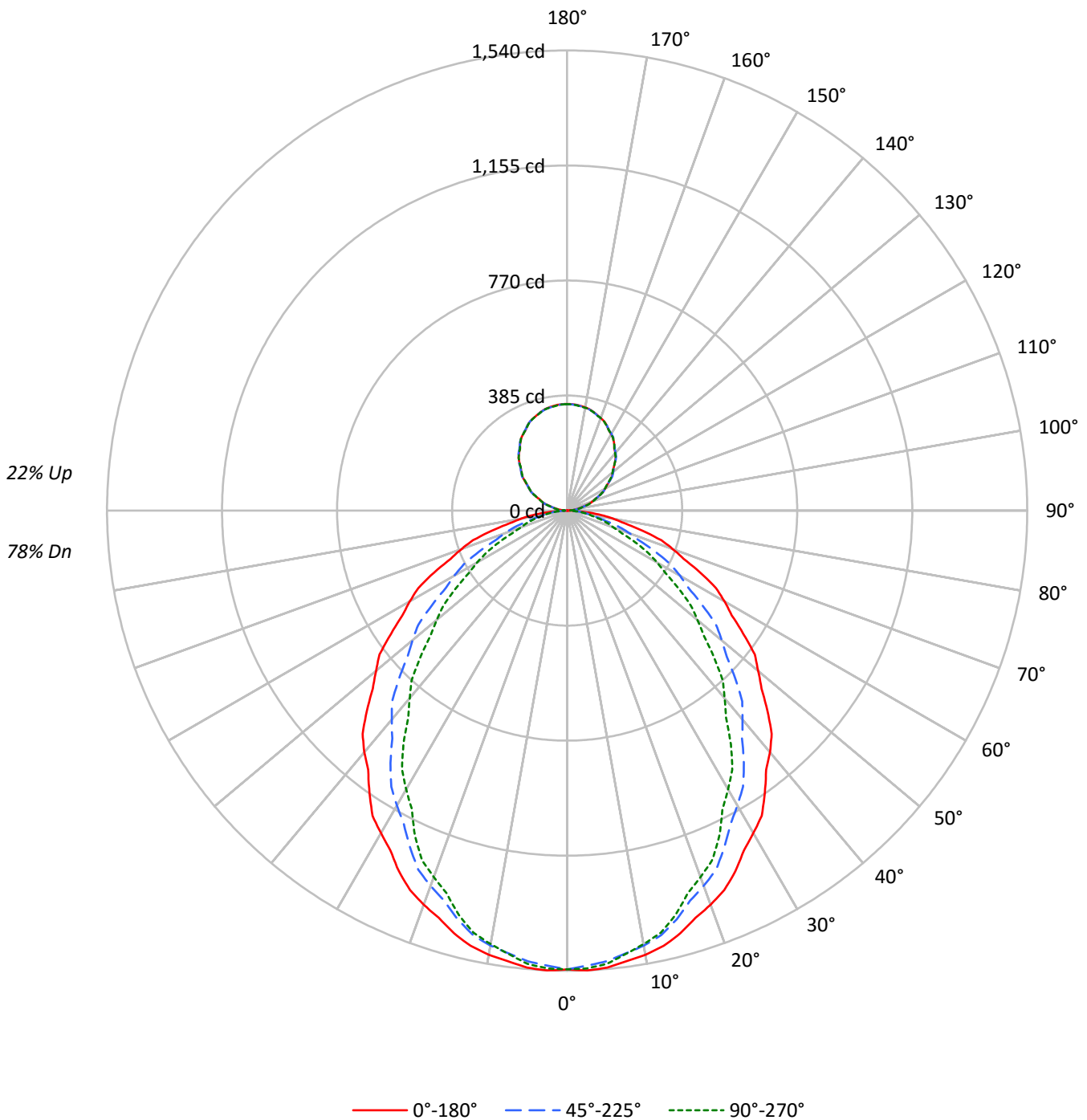
Input Watts (W): 49.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332364-927

CATALOG NUMBER: S123RDIP-S1165D365U927-4F0-1E-UDD-F1

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	109	109	109	109	99	99	99	90	90	90	82	82	82	78
1	105	100	96	93	100	96	92	89	88	85	82	80	78	76	73	72	70	67
2	96	88	82	77	91	84	79	74	77	73	69	71	67	64	65	62	60	57
3	88	78	71	65	83	75	68	63	69	63	59	63	59	55	58	54	51	48
4	80	69	61	55	77	67	59	54	61	55	51	57	52	48	52	48	45	42
5	74	62	54	48	71	60	52	47	55	49	44	51	46	42	47	43	39	37
6	69	56	48	42	65	54	46	41	50	44	39	46	41	37	43	38	35	32
7	64	51	43	37	61	49	42	36	46	39	35	42	37	33	39	35	31	29
8	59	47	39	33	57	45	38	32	42	36	31	39	34	30	36	32	28	26
9	55	43	35	30	53	41	34	29	39	32	28	36	31	27	34	29	26	24
10	52	40	32	27	50	38	31	27	36	30	25	33	28	24	31	27	23	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	16527	16527	16527
5°	16590	16361	16455
10°	16497	16156	16101
15°	16319	15778	15611
20°	16076	15306	14948
25°	15824	14775	14301
30°	15493	14162	13387
35°	15152	13548	12550
40°	14838	12826	11514
45°	14425	12113	10577
50°	13971	11302	9530
55°	13508	10376	8552
60°	13082	9384	7481
65°	12528	8308	6406
70°	11833	6977	5174
75°	10821	5490	4870
80°	9651	4860	4475
85°	8151	4310	4001



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	144.2	3.2
10°-20°	401.2	9.0
20°-30°	577.6	13.0
30°-40°	650.7	14.6
40°-50°	622.5	14.0
50°-60°	509.7	11.4
60°-70°	343.9	7.7
70°-80°	173.0	3.9
80°-90°	46.8	1.1
90°-100°	23.2	0.5
100°-110°	69.5	1.6
110°-120°	118.2	2.7
120°-130°	155.5	3.5
130°-140°	174.7	3.9
140°-150°	171.8	3.9
150°-160°	144.6	3.2
160°-170°	96.3	2.2
170°-180°	33.7	0.8
0°-30°	1123.0	25.2
0°-40°	1773.6	39.8
0°-60°	2905.8	65.2
0°-90°	3469.6	77.8
90°-120°	210.9	4.7
90°-150°	712.8	16.0
90°-180°	987.0	22.1
0°-180°	4457.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1535	1535	1535	1535	1535	
5°	1535	1529	1514	1525	1523	146
15°	1464	1450	1416	1410	1401	412
25°	1332	1300	1244	1219	1204	613
35°	1153	1106	1031	979	955	721
45°	948	889	796	727	695	731
55°	720	656	553	483	456	645
65°	492	422	326	268	252	487
75°	260	200	132	120	117	278
85°	66	40	35	32	32	74
90°	0	3	7	8	8	4
95°	17	18	21	22	22	19
105°	63	64	66	66	67	67
115°	119	120	119	120	119	118
125°	174	175	174	173	172	155
135°	226	228	227	226	226	174
145°	274	275	275	275	274	171
155°	314	314	314	315	313	144
165°	342	341	341	342	341	96
175°	356	354	354	356	354	34
180°	356	356	356	356	356	



TEST NUMBER: P332364-927

CATALOG NUMBER: S123RDIP-S1165D365U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4
2.5°	1540.4	1539.4	1538.6	1537.7	1536.8	1535.0	1532.4	1529.7	1527.1	1524.4	1526.9
5°	1535.4	1534.0	1532.6	1531.2	1529.9	1527.5	1524.2	1520.8	1517.5	1514.2	1516.7
7.5°	1521.1	1519.7	1518.2	1516.7	1515.2	1512.3	1508.0	1503.6	1499.4	1495.0	1496.4
10°	1509.3	1507.3	1505.4	1503.4	1501.5	1498.0	1493.0	1488.0	1483.0	1478.1	1478.4
12.5°	1492.3	1490.2	1488.0	1485.8	1483.7	1479.6	1473.5	1467.4	1461.3	1455.2	1455.0
15°	1464.4	1461.3	1458.3	1455.2	1452.2	1446.8	1439.1	1431.3	1423.6	1415.9	1414.4
17.5°	1429.3	1425.8	1422.2	1418.6	1415.2	1408.4	1398.6	1388.7	1378.9	1369.0	1366.1
20°	1403.4	1399.0	1394.6	1390.1	1385.7	1378.2	1367.7	1357.2	1346.6	1336.2	1332.5
22.5°	1374.5	1369.4	1364.3	1359.2	1354.2	1346.0	1334.8	1323.7	1312.5	1301.2	1296.8
25°	1332.4	1325.5	1318.6	1311.6	1304.7	1294.9	1282.1	1269.5	1256.7	1244.0	1238.2
27.5°	1281.4	1273.7	1266.1	1258.5	1250.8	1239.9	1225.7	1211.6	1197.4	1183.2	1175.1
30°	1246.5	1238.2	1229.9	1221.5	1213.3	1201.3	1185.9	1170.4	1154.9	1139.4	1130.0
32.5°	1211.6	1202.2	1192.8	1183.4	1174.0	1161.1	1144.7	1128.3	1111.9	1095.6	1085.3
35°	1153.1	1143.1	1133.1	1123.2	1113.3	1099.7	1082.5	1065.4	1048.2	1031.0	1019.1
37.5°	1093.8	1082.8	1071.7	1060.6	1049.6	1034.8	1016.5	998.2	979.9	961.6	948.1
40°	1056.0	1043.8	1031.6	1019.5	1007.3	991.3	971.7	952.0	932.4	912.8	898.3
42.5°	1013.1	1000.9	988.8	976.6	964.4	948.2	927.9	907.5	887.2	867.0	851.2
45°	947.6	935.2	922.7	910.3	897.8	880.9	859.6	838.3	817.0	795.7	779.9
47.5°	882.1	868.5	854.8	841.1	827.4	809.9	788.6	767.3	746.0	724.8	707.6
50°	834.3	821.3	808.3	795.3	782.3	764.6	742.2	719.8	697.4	674.9	657.7
52.5°	791.5	777.4	763.3	749.2	735.0	716.8	694.7	672.5	650.3	628.1	610.3
55°	719.8	706.2	692.6	679.1	665.5	647.0	623.4	599.9	576.4	552.9	536.9
57.5°	653.5	638.7	623.9	609.2	594.4	575.2	551.6	527.9	504.3	480.7	465.5
60°	607.7	592.5	577.3	562.1	546.8	527.7	504.7	481.8	458.8	435.9	420.9
62.5°	561.8	546.6	531.4	516.2	501.0	481.9	458.9	435.9	413.0	390.0	376.0
65°	491.9	476.7	461.4	446.2	431.0	412.6	391.0	369.4	347.8	326.2	312.7
67.5°	421.9	406.5	391.1	375.7	360.4	342.3	321.6	300.9	280.2	259.5	249.4
70°	376.0	361.2	346.2	331.2	316.3	299.1	279.8	260.4	241.1	221.7	212.0
72.5°	330.3	315.5	300.8	286.1	271.3	255.2	237.6	220.0	202.4	184.8	176.9
75°	260.2	247.0	233.7	220.4	207.2	192.9	177.7	162.4	147.2	132.0	129.2
77.5°	196.5	184.5	172.5	160.5	148.5	137.5	127.8	118.0	108.1	98.4	96.9
80°	155.7	144.3	132.9	121.6	110.3	101.7	95.9	90.1	84.3	78.4	77.6
82.5°	116.8	107.0	97.2	87.4	77.6	71.4	68.7	65.9	63.2	60.5	59.7
85°	66.0	59.9	53.8	47.8	41.7	38.2	37.4	36.5	35.7	34.9	34.3
87.5°	24.0	21.6	19.3	17.0	14.7	13.6	13.8	13.9	14.1	14.3	14.1
90°	0.3	0.9	1.5	2.1	2.8	3.5	4.3	5.1	5.9	6.7	7.0
92.5°	6.8	7.2	7.6	8.1	8.5	8.9	9.3	9.8	10.3	10.8	10.9
95°	16.6	17.0	17.3	17.8	18.2	18.7	19.3	19.7	20.2	20.8	21.0
97.5°	29.3	29.6	30.0	30.3	30.7	31.0	31.4	31.7	32.1	32.4	32.7
100°	38.1	38.4	38.8	39.2	39.5	39.9	40.2	40.6	40.9	41.1	41.4
102.5°	48.2	48.4	48.6	48.8	49.0	49.4	49.7	50.2	50.6	51.0	51.2
105°	63.0	63.1	63.2	63.4	63.5	63.8	64.4	65.0	65.5	66.1	66.1
107.5°	80.2	80.3	80.4	80.5	80.6	80.6	80.9	81.1	81.4	81.6	81.8
110°	91.0	91.1	91.3	91.3	91.5	91.6	91.7	91.9	92.0	92.1	92.4



TEST NUMBER: P332364-927

CATALOG NUMBER: S123RDIP-S1165D365U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	102.2	102.3	102.3	102.4	102.5	102.5	102.6	102.6	102.6	102.7	102.9
115°	119.0	119.1	119.4	119.5	119.7	119.8	119.6	119.5	119.4	119.2	119.3
117.5°	135.9	136.0	136.2	136.3	136.4	136.3	136.2	136.0	135.9	135.7	135.7
120°	146.4	146.8	147.2	147.5	147.9	147.9	147.7	147.3	147.0	146.7	146.6
122.5°	157.4	157.6	158.0	158.2	158.5	158.5	158.4	158.2	158.0	157.9	157.7
125°	174.1	174.3	174.5	174.7	174.9	174.9	174.8	174.7	174.5	174.4	174.1
127.5°	189.6	190.0	190.4	190.8	191.2	191.3	191.2	191.0	190.9	190.8	190.4
130°	199.9	200.3	200.9	201.4	201.8	202.0	201.8	201.7	201.5	201.3	201.1
132.5°	210.2	210.7	211.2	211.7	212.1	212.4	212.2	212.1	211.9	211.8	211.5
135°	225.9	226.3	226.6	227.0	227.4	227.6	227.5	227.4	227.4	227.4	227.0
137.5°	240.5	240.8	241.1	241.4	241.7	241.9	242.1	242.2	242.4	242.6	242.3
140°	250.6	250.9	251.2	251.5	251.8	252.0	252.1	252.1	252.2	252.2	252.2
142.5°	259.8	260.1	260.4	260.7	260.9	261.2	261.3	261.4	261.5	261.7	261.6
145°	274.1	274.2	274.3	274.4	274.6	274.7	274.9	275.1	275.3	275.4	275.4
147.5°	286.6	286.8	287.1	287.3	287.5	287.7	287.9	288.0	288.2	288.4	288.4
150°	295.3	295.5	295.6	295.7	295.9	296.0	296.1	296.2	296.4	296.4	296.4
152.5°	302.5	302.7	302.9	303.0	303.2	303.3	303.4	303.5	303.6	303.6	303.7
155°	313.9	313.9	313.9	313.9	313.9	313.9	313.9	313.9	314.0	314.1	314.3
157.5°	323.4	323.4	323.3	323.2	323.1	323.1	323.2	323.2	323.3	323.4	323.6
160°	329.5	329.4	329.2	329.2	329.0	328.9	328.9	328.9	328.9	328.9	329.2
162.5°	334.9	334.7	334.5	334.4	334.1	334.1	334.1	334.2	334.3	334.3	334.6
165°	341.8	341.7	341.4	341.3	341.0	341.0	341.0	341.0	341.0	341.0	341.4
167.5°	347.4	347.1	346.9	346.6	346.3	346.3	346.3	346.3	346.4	346.5	346.8
170°	350.5	350.2	350.0	349.7	349.5	349.4	349.4	349.4	349.4	349.4	349.8
172.5°	353.0	352.7	352.4	352.2	352.0	351.8	351.8	351.8	351.8	351.8	352.2
175°	355.5	355.3	355.1	354.8	354.6	354.4	354.4	354.4	354.4	354.4	354.8
177.5°	356.6	356.4	356.2	356.0	355.8	355.7	355.7	355.7	355.7	355.7	356.0
180°	356.4	356.4	356.4	356.4	356.4	356.4	356.4	356.4	356.4	356.4	356.4



TEST NUMBER: P332364-927

CATALOG NUMBER: S123RDIP-S1165D365U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4
2.5°	1529.3	1531.8	1534.1	1535.2	1534.7	1534.3	1533.8	1533.3
5°	1519.2	1521.7	1524.2	1525.1	1524.6	1524.0	1523.4	1522.9
7.5°	1497.8	1499.2	1500.6	1500.8	1499.8	1498.9	1497.9	1497.0
10°	1478.7	1478.9	1479.2	1478.7	1477.3	1475.9	1474.5	1473.1
12.5°	1454.8	1454.7	1454.5	1453.7	1452.1	1450.4	1448.8	1447.2
15°	1413.1	1411.7	1410.3	1408.7	1406.7	1404.8	1402.8	1400.9
17.5°	1363.2	1360.2	1357.2	1354.4	1351.5	1348.6	1345.8	1342.8
20°	1329.0	1325.3	1321.8	1318.3	1314.9	1311.6	1308.4	1305.0
22.5°	1292.3	1287.9	1283.3	1279.5	1276.4	1273.4	1270.3	1267.2
25°	1232.4	1226.5	1220.8	1216.3	1213.3	1210.2	1207.2	1204.1
27.5°	1167.0	1159.0	1150.9	1144.5	1139.9	1135.3	1130.6	1125.9
30°	1120.5	1111.2	1101.8	1094.9	1090.4	1086.0	1081.6	1077.1
32.5°	1075.0	1064.7	1054.4	1046.9	1042.3	1037.6	1033.0	1028.3
35°	1007.3	995.4	983.5	975.0	970.0	965.0	960.0	955.1
37.5°	934.5	921.1	907.5	897.7	891.6	885.4	879.3	873.1
40°	884.0	869.6	855.2	844.9	838.4	832.1	825.8	819.4
42.5°	835.5	819.8	804.1	793.4	787.7	782.0	776.3	770.6
45°	764.1	748.4	732.6	721.4	714.8	708.1	701.5	694.8
47.5°	690.4	673.3	656.1	644.6	638.7	632.7	626.8	620.9
50°	640.6	623.4	606.3	594.5	588.2	581.8	575.4	569.1
52.5°	592.5	574.6	556.8	545.0	539.3	533.7	528.0	522.3
55°	520.8	504.7	488.7	477.9	472.4	466.8	461.3	455.7
57.5°	450.4	435.1	420.0	410.0	405.4	400.7	395.9	391.3
60°	405.9	391.0	376.0	366.2	361.6	356.8	352.1	347.5
62.5°	361.9	347.8	333.7	324.3	319.3	314.4	309.5	304.6
65°	299.1	285.6	272.0	263.7	260.7	257.6	254.6	251.5
67.5°	239.2	229.1	219.0	212.3	209.1	205.7	202.5	199.2
70°	202.2	192.6	182.9	176.6	173.5	170.5	167.4	164.4
72.5°	169.0	161.1	153.1	148.5	147.3	146.0	144.7	143.5
75°	126.4	123.7	120.9	119.3	118.7	118.2	117.6	117.1
77.5°	95.4	93.9	92.4	91.3	90.8	90.2	89.7	89.1
80°	76.8	76.0	75.1	74.5	73.9	73.4	72.8	72.2
82.5°	58.9	58.1	57.2	56.7	56.6	56.5	56.4	56.3
85°	33.7	33.2	32.6	32.4	32.4	32.4	32.4	32.4
87.5°	13.9	13.8	13.6	13.4	13.2	13.0	12.8	12.7
90°	7.2	7.4	7.7	7.9	8.0	8.2	8.2	8.4
92.5°	11.2	11.3	11.6	11.6	11.6	11.5	11.4	11.3
95°	21.2	21.5	21.7	21.9	21.9	21.9	21.9	21.9
97.5°	33.0	33.3	33.6	33.7	33.7	33.7	33.6	33.6
100°	41.5	41.7	41.9	42.1	42.1	42.3	42.5	42.5
102.5°	51.4	51.6	51.7	51.8	51.8	51.8	51.7	51.7
105°	66.1	66.1	66.1	66.1	66.2	66.4	66.5	66.6
107.5°	82.0	82.1	82.4	82.5	82.4	82.3	82.2	82.1
110°	92.6	92.8	93.1	93.2	93.0	92.9	92.8	92.7



TEST NUMBER: P332364-927

CATALOG NUMBER: S123RDIP-S1165D365U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	103.2	103.5	103.9	103.9	103.9	103.9	103.9	103.9
115°	119.4	119.5	119.5	119.5	119.5	119.4	119.3	119.2
117.5°	135.7	135.7	135.7	135.5	135.4	135.2	135.1	134.9
120°	146.6	146.5	146.5	146.3	146.2	146.1	146.0	145.8
122.5°	157.6	157.4	157.2	157.1	156.9	156.7	156.5	156.4
125°	173.9	173.6	173.4	173.2	172.9	172.7	172.4	172.1
127.5°	190.0	189.7	189.3	189.0	188.8	188.5	188.2	187.9
130°	200.8	200.5	200.3	199.9	199.6	199.1	198.7	198.2
132.5°	211.2	210.9	210.6	210.3	209.9	209.6	209.3	209.0
135°	226.8	226.6	226.3	226.2	226.0	225.9	225.8	225.6
137.5°	242.1	241.9	241.5	241.3	241.1	240.8	240.6	240.3
140°	252.1	252.1	252.0	251.8	251.3	250.9	250.4	250.0
142.5°	261.5	261.4	261.4	261.2	260.9	260.5	260.2	259.8
145°	275.4	275.3	275.2	275.0	274.8	274.6	274.3	274.1
147.5°	288.4	288.4	288.4	288.2	287.9	287.5	287.1	286.7
150°	296.4	296.4	296.4	296.3	295.9	295.6	295.2	294.8
152.5°	303.8	304.0	304.0	303.9	303.6	303.2	302.9	302.6
155°	314.6	314.8	315.1	315.0	314.6	314.1	313.7	313.2
157.5°	323.8	324.2	324.4	324.3	324.0	323.7	323.3	323.0
160°	329.5	329.9	330.2	330.2	329.9	329.7	329.5	329.2
162.5°	334.9	335.3	335.6	335.5	335.1	334.7	334.3	333.9
165°	341.7	342.1	342.5	342.5	342.0	341.6	341.1	340.7
167.5°	347.2	347.6	348.0	348.0	347.6	347.2	346.8	346.5
170°	350.2	350.7	351.1	351.1	350.7	350.2	349.8	349.4
172.5°	352.6	353.0	353.4	353.4	352.9	352.5	352.0	351.6
175°	355.1	355.5	355.9	355.8	355.5	355.0	354.6	354.1
177.5°	356.3	356.6	356.9	356.9	356.6	356.2	355.8	355.5
180°	356.4	356.4	356.4	356.4	356.4	356.4	356.4	356.4

(END OF REPORT)