

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: P332631-830

Luminaire Tested: **S124DIP-S1020D365U830-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332631-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIP-S1020D365U830-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 365 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5552.4 lumens
Efficiency: N/A
Efficacy: 127.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

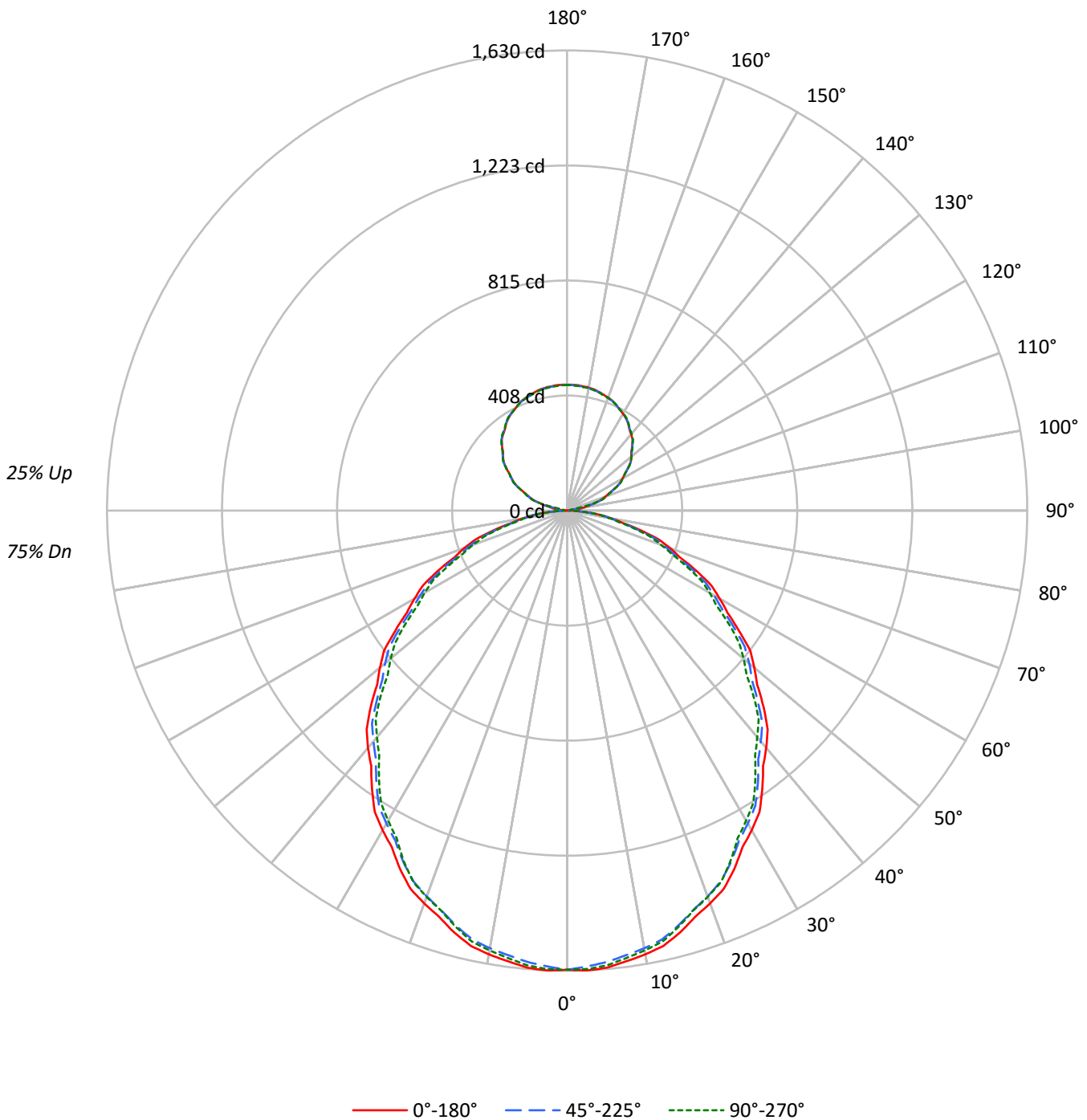
Input Watts (W): 43.5
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	113	113	113	113	108	108	108	108	97	97	97	88	88	88	79	79	79	75
1	103	99	95	91	98	94	91	87	85	83	80	77	75	73	70	68	67	63
2	94	86	80	74	89	82	77	72	75	70	66	68	64	61	62	59	56	53
3	86	76	68	62	81	73	66	60	66	60	56	60	56	52	55	51	48	45
4	79	67	59	53	75	64	57	51	59	53	48	54	49	44	49	45	41	38
5	72	60	52	45	69	58	50	44	53	46	41	48	43	39	44	40	36	33
6	67	54	46	40	63	52	44	38	48	41	36	44	38	34	40	35	32	29
7	62	49	41	35	59	47	39	34	43	37	32	40	34	30	37	32	28	26
8	58	45	37	31	55	43	35	30	40	33	29	37	31	27	34	29	25	23
9	54	41	33	28	51	39	32	27	36	30	26	34	28	24	31	26	23	21
10	50	38	30	25	48	36	29	25	34	28	23	31	26	22	29	24	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13130	13130	13130
5°	13169	13011	13105
10°	13086	12904	12969
15°	12929	12721	12754
20°	12718	12494	12506
25°	12479	12235	12200
30°	12185	11929	11820
35°	11880	11610	11456
40°	11564	11248	11041
45°	11233	10891	10683
50°	10868	10574	10246
55°	10473	10162	9831
60°	10078	9700	9405
65°	9635	9259	8886
70°	9135	8674	8337
75°	8372	7966	7764
80°	7452	7146	6969
85°	6521	6280	6150



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.2	2.8
10°-20°	431.5	7.8
20°-30°	635.2	11.4
30°-40°	738.4	13.3
40°-50°	738.4	13.3
50°-60°	645.9	11.6
60°-70°	479.7	8.6
70°-80°	272.5	4.9
80°-90°	79.9	1.4
90°-100°	15.2	0.3
100°-110°	97.1	1.7
110°-120°	185.8	3.3
120°-130°	235.8	4.2
130°-140°	252.3	4.5
140°-150°	236.0	4.2
150°-160°	190.3	3.4
160°-170°	122.7	2.2
170°-180°	42.3	0.8
0°-30°	1219.8	22.0
0°-40°	1958.2	35.3
0°-60°	3342.6	60.2
0°-90°	4174.8	75.2
90°-120°	298.1	5.4
90°-150°	1022.3	18.4
90°-180°	1378.0	24.8
0°-180°	5552.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1626	1626	1626	1626	1626	
5°	1625	1619	1606	1619	1617	154
15°	1547	1541	1522	1529	1526	436
25°	1401	1391	1374	1374	1370	644
35°	1205	1196	1178	1169	1162	753
45°	984	974	954	940	936	758
55°	744	739	722	707	698	666
65°	504	497	485	472	465	499
75°	268	262	255	250	249	285
85°	70	70	68	68	66	77
90°	1	5	7	9	10	5
95°	18	8	7	9	10	24
105°	100	102	104	106	95	105
115°	187	188	188	188	188	184
125°	263	264	264	265	265	235
135°	326	326	327	328	329	251
145°	376	377	377	378	378	235
155°	413	413	412	413	412	190
165°	435	434	434	436	433	123
175°	445	444	444	446	443	42
180°	445	445	445	445	445	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4
2.5°	1630.5	1629.8	1629.1	1628.4	1627.8	1626.1	1623.5	1621.0	1618.4	1615.9	1618.3
5°	1625.0	1623.9	1622.8	1621.6	1620.4	1618.3	1615.0	1611.8	1608.7	1605.5	1608.7
7.5°	1610.0	1608.7	1607.6	1606.5	1605.3	1603.0	1599.4	1595.9	1592.3	1588.8	1591.4
10°	1596.4	1595.3	1594.0	1592.9	1591.8	1589.3	1585.5	1581.8	1578.0	1574.2	1576.5
12.5°	1578.7	1577.5	1576.3	1575.2	1574.0	1571.4	1567.4	1563.5	1559.4	1555.5	1558.0
15°	1546.9	1545.7	1544.5	1543.4	1542.2	1539.5	1535.1	1530.8	1526.4	1522.1	1523.8
17.5°	1508.5	1507.1	1505.6	1504.2	1502.8	1500.0	1495.8	1491.8	1487.6	1483.6	1484.6
20°	1480.4	1478.9	1477.5	1476.0	1474.6	1471.7	1467.4	1463.0	1458.7	1454.3	1455.2
22.5°	1450.2	1448.2	1446.3	1444.4	1442.6	1439.4	1435.0	1430.7	1426.3	1422.0	1423.6
25°	1400.9	1398.9	1396.8	1394.8	1392.8	1389.8	1385.7	1381.7	1377.6	1373.6	1373.9
27.5°	1344.6	1342.6	1340.4	1338.3	1336.2	1333.3	1329.6	1325.8	1322.0	1318.2	1317.6
30°	1307.1	1304.8	1302.4	1300.1	1297.8	1294.8	1291.0	1287.2	1283.5	1279.7	1278.6
32.5°	1267.4	1265.4	1263.3	1261.2	1259.1	1256.0	1252.1	1248.1	1244.1	1240.1	1238.7
35°	1205.4	1203.4	1201.4	1199.4	1197.3	1194.3	1190.2	1186.2	1182.1	1178.1	1176.0
37.5°	1140.0	1138.1	1136.3	1134.4	1132.6	1129.5	1125.1	1120.8	1116.4	1112.1	1109.9
40°	1097.3	1095.0	1092.6	1090.3	1088.0	1084.7	1080.3	1076.0	1071.7	1067.3	1064.4
42.5°	1051.4	1050.0	1048.6	1047.3	1045.8	1042.7	1037.9	1033.1	1028.3	1023.5	1020.1
45°	983.9	981.8	979.9	977.8	975.8	972.4	967.8	963.2	958.6	953.9	950.7
47.5°	913.2	911.9	910.5	909.1	907.7	904.8	900.6	896.3	892.0	887.7	884.1
50°	865.3	864.1	863.0	861.9	860.6	858.1	854.0	850.0	845.9	841.9	837.8
52.5°	818.4	817.0	815.6	814.3	812.8	810.0	805.7	801.4	797.1	792.9	789.3
55°	744.1	743.2	742.3	741.5	740.6	738.2	734.1	730.1	726.0	722.0	718.5
57.5°	673.3	672.2	671.3	670.2	669.3	666.8	662.8	658.8	654.8	650.8	647.5
60°	624.2	622.7	621.3	619.9	618.4	615.9	612.1	608.3	604.5	600.8	598.1
62.5°	576.3	575.0	573.8	572.6	571.4	568.8	564.8	560.8	556.8	552.8	550.4
65°	504.4	502.8	501.4	500.0	498.5	496.3	493.4	490.6	487.7	484.7	481.9
67.5°	431.9	430.6	429.2	427.9	426.5	424.5	421.7	419.0	416.1	413.4	410.6
70°	387.0	385.0	383.0	381.0	378.9	376.7	374.5	372.1	369.9	367.5	365.1
72.5°	339.1	337.1	335.1	333.0	331.0	329.0	327.2	325.4	323.5	321.6	319.8
75°	268.4	267.0	265.5	264.1	262.7	261.2	259.8	258.4	256.8	255.4	254.3
77.5°	201.0	200.3	199.6	199.1	198.4	197.5	196.1	194.9	193.6	192.4	192.0
80°	160.3	159.4	158.5	157.7	156.8	156.1	155.5	155.0	154.4	153.7	153.2
82.5°	120.6	120.3	119.9	119.4	119.0	118.8	118.7	118.6	118.5	118.3	118.0
85°	70.4	70.4	70.4	70.4	70.4	70.1	69.5	68.9	68.3	67.8	67.8
87.5°	27.3	27.2	27.1	27.1	27.1	27.0	26.9	26.7	26.6	26.5	26.6
90°	1.0	1.8	2.6	3.5	4.2	5.0	5.6	6.1	6.7	7.4	7.7
92.5°	4.2	4.2	4.2	4.3	4.3	4.7	5.3	5.8	6.5	7.1	7.5
95°	18.3	15.8	13.3	10.7	8.3	7.1	7.1	7.2	7.3	7.4	7.7
97.5°	38.9	40.4	42.0	43.6	45.1	41.8	33.6	25.4	17.1	8.8	8.9
100°	54.7	56.0	57.3	58.6	59.9	55.5	45.3	35.1	24.9	14.7	13.4
102.5°	72.2	73.2	74.2	75.1	76.2	76.0	74.6	73.3	71.9	70.6	57.0
105°	100.3	100.7	101.1	101.6	102.1	102.5	102.8	103.2	103.6	104.0	104.6
107.5°	126.3	126.5	126.8	127.0	127.2	127.5	128.1	128.6	129.0	129.6	129.9
110°	143.9	144.1	144.3	144.6	144.8	145.2	145.5	146.0	146.5	146.9	147.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	161.0	161.4	161.7	162.1	162.6	162.9	163.1	163.2	163.4	163.7	163.6
115°	187.2	187.5	187.7	187.8	188.1	188.1	188.1	188.0	187.9	187.8	188.0
117.5°	210.8	211.1	211.4	211.8	212.1	212.3	212.4	212.6	212.7	212.9	212.9
120°	226.9	227.2	227.4	227.7	228.0	228.1	228.1	228.0	227.9	227.8	228.0
122.5°	241.8	242.0	242.1	242.3	242.5	242.6	242.7	242.8	242.9	243.1	243.1
125°	263.2	263.4	263.7	264.0	264.4	264.4	264.3	264.1	264.0	263.8	264.0
127.5°	283.4	283.5	283.5	283.6	283.7	283.9	284.3	284.6	284.9	285.3	285.2
130°	296.4	296.5	296.6	296.7	296.8	296.9	297.1	297.4	297.6	297.8	297.8
132.5°	308.5	308.6	308.7	308.9	309.0	309.2	309.4	309.7	310.0	310.3	310.4
135°	326.4	326.4	326.3	326.2	326.1	326.2	326.6	326.9	327.2	327.4	327.6
137.5°	342.3	342.4	342.4	342.4	342.5	342.7	343.0	343.3	343.7	343.9	344.1
140°	352.8	352.9	353.1	353.2	353.4	353.5	353.6	353.8	353.9	354.1	354.3
142.5°	362.1	362.3	362.6	362.9	363.2	363.4	363.4	363.5	363.6	363.7	363.8
145°	376.5	376.6	376.8	377.1	377.3	377.4	377.4	377.4	377.4	377.4	377.5
147.5°	387.8	388.2	388.6	389.1	389.5	389.6	389.6	389.5	389.4	389.4	389.4
150°	396.1	396.3	396.6	397.0	397.3	397.4	397.3	397.2	397.1	397.1	397.1
152.5°	403.0	403.2	403.5	403.7	404.0	404.0	403.9	403.7	403.6	403.5	403.6
155°	412.7	412.8	412.8	412.9	413.0	412.9	412.7	412.5	412.3	412.1	412.4
157.5°	420.9	420.8	420.8	420.8	420.8	420.6	420.4	420.1	419.8	419.6	420.0
160°	425.7	425.5	425.3	425.1	424.8	424.7	424.6	424.5	424.4	424.3	424.8
162.5°	430.0	429.7	429.4	429.1	428.9	428.7	428.6	428.5	428.5	428.4	428.9
165°	435.4	435.0	434.6	434.2	433.9	433.7	433.7	433.7	433.7	433.7	434.3
167.5°	439.6	439.2	438.8	438.5	438.1	437.9	437.8	437.8	437.7	437.7	438.4
170°	442.1	441.6	441.1	440.7	440.3	440.1	440.2	440.3	440.3	440.4	440.9
172.5°	443.7	443.2	442.7	442.3	441.9	441.7	441.8	441.9	441.9	442.0	442.5
175°	445.4	444.9	444.5	444.0	443.6	443.4	443.5	443.6	443.7	443.7	444.4
177.5°	446.2	445.7	445.4	444.9	444.5	444.3	444.5	444.6	444.7	444.8	445.4
180°	445.4	445.4	445.4	445.4	445.4	445.4	445.4	445.4	445.4	445.4	445.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4
2.5°	1620.5	1622.9	1625.2	1626.3	1626.0	1625.8	1625.5	1625.3
5°	1611.8	1615.0	1618.3	1619.6	1619.0	1618.3	1617.8	1617.2
7.5°	1593.9	1596.5	1599.0	1600.2	1599.8	1599.4	1599.0	1598.7
10°	1578.9	1581.2	1583.5	1584.3	1583.8	1583.2	1582.6	1582.1
12.5°	1560.6	1563.1	1565.7	1566.5	1565.8	1564.9	1564.1	1563.3
15°	1525.6	1527.3	1529.1	1529.5	1528.6	1527.8	1526.9	1526.0
17.5°	1485.7	1486.9	1487.9	1488.2	1487.6	1487.0	1486.5	1485.8
20°	1456.0	1457.0	1457.8	1457.9	1457.4	1456.8	1456.2	1455.7
22.5°	1425.1	1426.7	1428.2	1428.5	1427.5	1426.4	1425.4	1424.4
25°	1374.1	1374.4	1374.7	1374.2	1373.1	1372.0	1370.7	1369.6
27.5°	1316.9	1316.2	1315.5	1314.5	1313.0	1311.5	1310.0	1308.6
30°	1277.4	1276.2	1275.1	1273.8	1272.3	1270.8	1269.4	1268.0
32.5°	1237.3	1236.0	1234.5	1233.1	1231.6	1230.2	1228.8	1227.3
35°	1174.0	1172.0	1170.0	1168.2	1166.8	1165.4	1163.9	1162.4
37.5°	1107.7	1105.5	1103.3	1101.3	1099.4	1097.4	1095.5	1093.6
40°	1061.5	1058.6	1055.7	1053.6	1052.1	1050.7	1049.2	1047.7
42.5°	1016.8	1013.4	1010.0	1007.9	1006.9	1005.9	1004.9	1004.0
45°	947.5	944.3	941.1	939.1	938.3	937.5	936.5	935.7
47.5°	880.5	876.9	873.4	870.4	868.3	866.0	863.8	861.7
50°	833.8	829.7	825.7	822.7	821.0	819.3	817.6	815.8
52.5°	785.7	782.0	778.4	775.6	773.4	771.2	769.0	766.8
55°	715.0	711.5	708.0	705.5	703.7	702.0	700.2	698.5
57.5°	644.2	640.9	637.6	635.1	633.4	631.8	630.1	628.4
60°	595.6	593.0	590.3	588.3	586.8	585.4	584.0	582.5
62.5°	548.1	545.6	543.3	541.4	540.0	538.5	537.1	535.6
65°	479.0	476.1	473.2	471.0	469.6	468.2	466.7	465.2
67.5°	407.8	405.0	402.3	400.7	400.2	399.8	399.4	399.1
70°	362.9	360.5	358.3	356.7	355.8	354.9	354.0	353.2
72.5°	317.9	316.0	314.2	312.8	312.0	311.1	310.3	309.3
75°	253.1	251.9	250.8	250.1	249.8	249.5	249.2	248.9
77.5°	191.6	191.3	191.0	190.4	189.6	188.9	188.1	187.4
80°	152.6	152.0	151.5	151.0	150.7	150.4	150.1	149.9
82.5°	117.6	117.3	117.0	116.6	116.3	116.0	115.7	115.5
85°	67.8	67.8	67.8	67.6	67.3	67.0	66.7	66.4
87.5°	26.7	26.8	26.9	26.9	27.0	27.0	27.0	27.1
90°	8.2	8.7	9.1	9.4	9.5	9.7	9.8	10.0
92.5°	7.9	8.4	8.9	9.0	9.1	9.1	9.1	9.2
95°	8.2	8.7	9.1	9.3	9.4	9.5	9.6	9.6
97.5°	8.9	9.0	9.0	9.0	9.1	9.1	9.2	9.3
100°	12.2	10.8	9.6	9.0	9.1	9.1	9.2	9.3
102.5°	43.5	29.9	16.3	9.5	9.5	9.5	9.6	9.6
105°	105.3	105.9	106.6	105.6	102.9	100.3	97.6	94.9
107.5°	130.3	130.5	130.9	131.2	131.5	131.8	132.1	132.3
110°	147.2	147.3	147.5	147.7	147.9	148.2	148.4	148.5



TEST NUMBER: P332631-830

CATALOG NUMBER: S124DIP-S1020D365U830-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	163.6	163.6	163.5	163.7	164.0	164.3	164.6	164.9
115°	188.1	188.3	188.5	188.5	188.5	188.5	188.5	188.5
117.5°	212.8	212.8	212.8	212.7	212.7	212.7	212.7	212.6
120°	228.1	228.3	228.5	228.5	228.3	228.1	228.0	227.8
122.5°	243.2	243.3	243.4	243.4	243.2	243.1	242.9	242.8
125°	264.3	264.5	264.7	264.9	264.9	265.0	265.0	265.1
127.5°	285.2	285.1	285.1	285.0	285.0	284.9	284.8	284.8
130°	297.9	298.0	298.1	298.1	298.1	298.1	298.1	298.1
132.5°	310.5	310.6	310.7	310.7	310.6	310.5	310.5	310.4
135°	327.7	327.9	328.0	328.2	328.3	328.5	328.7	328.8
137.5°	344.3	344.5	344.6	344.7	344.6	344.6	344.5	344.5
140°	354.5	354.8	355.0	355.2	355.2	355.2	355.3	355.4
142.5°	364.0	364.2	364.3	364.4	364.5	364.5	364.5	364.5
145°	377.6	377.7	377.7	377.8	378.0	378.1	378.2	378.4
147.5°	389.5	389.6	389.6	389.6	389.7	389.7	389.8	389.9
150°	397.1	397.1	397.1	397.1	397.2	397.3	397.3	397.4
152.5°	403.7	403.8	404.0	404.0	403.9	403.9	403.9	403.8
155°	412.6	412.9	413.2	413.3	413.0	412.8	412.6	412.4
157.5°	420.4	420.8	421.1	421.1	420.8	420.4	420.0	419.6
160°	425.3	425.7	426.1	426.1	425.7	425.3	424.8	424.3
162.5°	429.2	429.7	430.2	430.1	429.6	429.1	428.6	428.1
165°	434.9	435.5	436.1	436.0	435.4	434.7	434.0	433.4
167.5°	439.0	439.7	440.3	440.3	439.5	438.8	438.0	437.3
170°	441.6	442.1	442.7	442.6	442.0	441.2	440.5	439.7
172.5°	443.2	443.7	444.3	444.2	443.5	442.6	441.9	441.0
175°	445.1	445.7	446.4	446.3	445.4	444.5	443.6	442.7
177.5°	445.8	446.3	446.8	446.6	445.9	445.2	444.5	443.7
180°	445.4	445.4	445.4	445.4	445.4	445.4	445.4	445.4

(END OF REPORT)