

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: P332641-830

Luminaire Tested: **S124DIP-S1020D590U830-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332641-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIP-S1020D590U830-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6104.0 lumens
Efficiency: N/A
Efficacy: 125.1 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

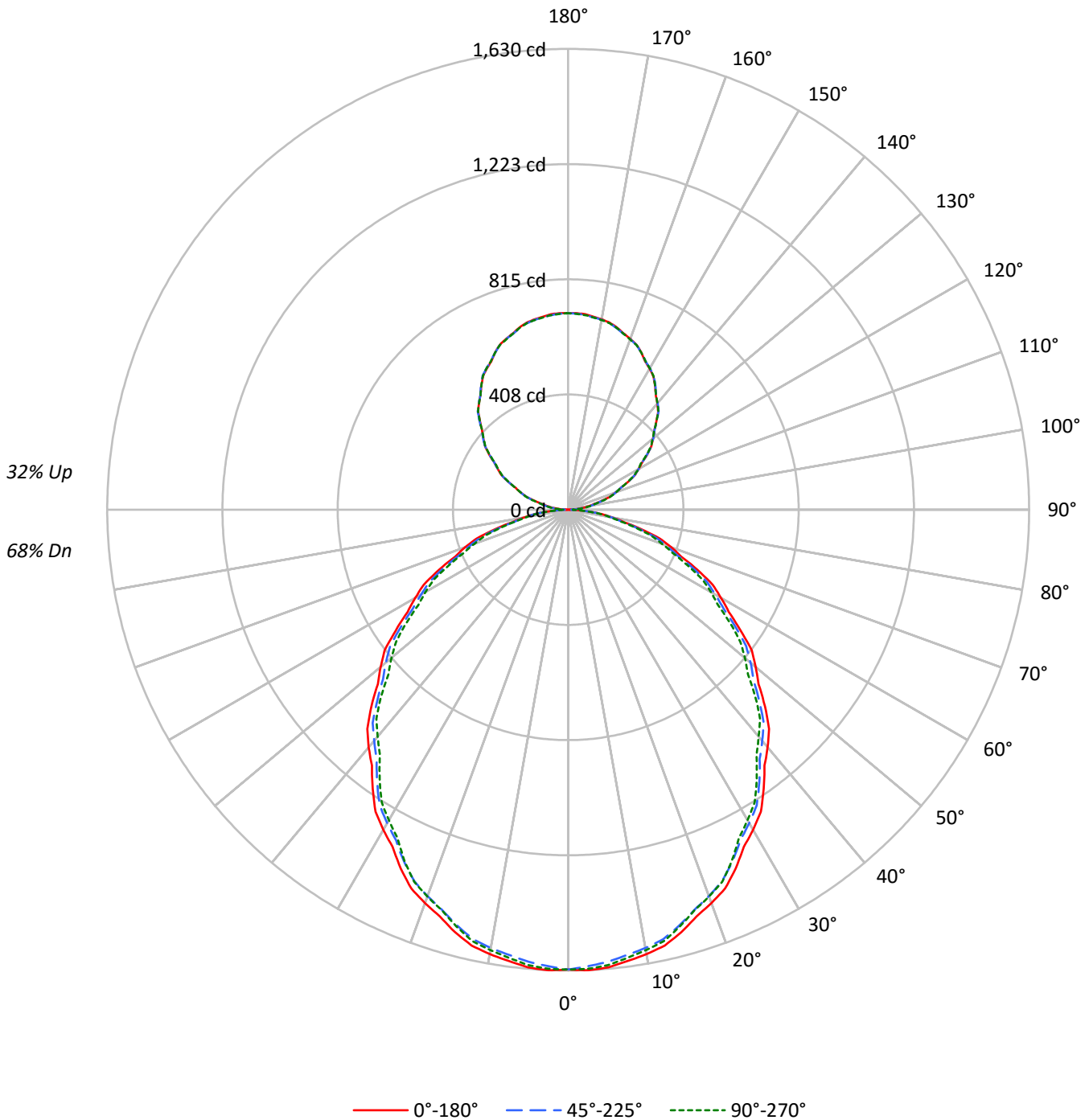
Input Watts (W): 48.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	112	112	112	105	105	105	105	94	94	94	83	83	83	73	73	73	68
1	102	97	93	90	96	92	89	85	82	79	77	73	71	69	64	63	62	58
2	93	85	79	73	87	81	75	70	72	68	64	64	61	58	57	54	52	48
3	85	75	67	61	80	71	64	59	63	58	54	57	52	49	50	47	44	41
4	78	66	58	52	73	63	56	50	56	50	46	51	46	42	45	41	38	35
5	71	59	51	45	67	56	49	43	51	44	40	45	40	36	41	36	33	30
6	66	53	45	39	62	51	43	37	46	39	35	41	36	32	37	33	29	27
7	61	48	40	34	57	46	38	33	42	35	31	37	32	28	34	29	26	24
8	57	44	36	30	53	42	34	29	38	32	27	34	29	25	31	27	23	21
9	53	40	32	27	50	38	31	26	35	29	25	32	27	23	29	24	21	19
10	49	37	29	25	47	35	28	24	32	26	22	29	24	21	27	22	19	17

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	2.5
10°-20°	431.5	7.1
20°-30°	635.2	10.4
30°-40°	738.4	12.1
40°-50°	738.4	12.1
50°-60°	645.9	10.6
60°-70°	479.7	7.9
70°-80°	272.5	4.5
80°-90°	80.7	1.3
90°-100°	45.8	0.8
100°-110°	135.8	2.2
110°-120°	230.5	3.8
120°-130°	304.0	5.0
130°-140°	341.4	5.6
140°-150°	335.4	5.5
150°-160°	282.1	4.6
160°-170°	187.7	3.1
170°-180°	65.7	1.1
0°-30°	1219.8	20.0
0°-40°	1958.2	32.1
0°-60°	3342.6	54.8
0°-90°	4175.5	68.4
90°-120°	412.2	6.8
90°-150°	1392.9	22.8
90°-180°	1928.0	31.6
0°-180°	6104.0	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°	2	7	12	15	16	6
95°	32	37	41	42	42	36
105°	125	126	128	130	131	133
115°	234	234	233	233	232	231
125°	341	341	341	340	339	304
135°	440	443	444	442	441	340
145°	535	537	538	537	536	335
155°	613	613	612	614	612	282
165°	667	666	664	667	666	188
175°	694	691	691	694	691	66
180°	695	695	695	695	695	



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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°	27.4	27.4	27.5	27.5	27.5	27.5	27.5	27.4	27.4	27.4	27.5
90°	1.6	2.9	4.2	5.6	6.9	8.0	9.0	9.9	10.8	11.8	12.5
92.5°	11.5	13.0	14.5	16.0	17.5	18.6	19.3	20.0	20.6	21.3	21.7
95°	32.2	33.4	34.4	35.4	36.6	37.5	38.4	39.2	40.1	40.8	41.2
97.5°	56.4	57.2	58.1	58.9	59.8	60.7	61.6	62.7	63.6	64.7	65.0
100°	75.2	75.8	76.3	76.7	77.2	77.9	79.0	80.1	81.2	82.3	82.5
102.5°	95.0	95.2	95.4	95.6	95.8	96.4	97.4	98.3	99.3	100.3	100.7
105°	125.3	125.4	125.5	125.6	125.7	126.0	126.5	127.0	127.4	127.9	128.3
107.5°	156.9	157.1	157.2	157.4	157.6	157.7	157.7	157.8	157.9	158.0	158.3
110°	178.5	178.7	179.0	179.2	179.5	179.5	179.4	179.3	179.2	179.0	178.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	200.9	200.9	201.0	201.0	201.0	201.0	200.8	200.5	200.3	200.1	200.0
115°	234.4	234.4	234.4	234.4	234.4	234.2	234.0	233.8	233.6	233.3	233.2
117.5°	266.0	266.1	266.2	266.3	266.4	266.4	266.2	266.0	265.8	265.7	265.2
120°	287.1	287.6	288.0	288.5	289.0	289.1	288.7	288.3	287.9	287.6	287.0
122.5°	309.0	309.2	309.3	309.5	309.7	309.8	309.6	309.4	309.2	309.2	308.7
125°	341.4	341.4	341.4	341.4	341.4	341.3	341.2	341.1	340.9	340.8	340.5
127.5°	370.7	371.1	371.5	371.8	372.1	372.2	372.0	371.8	371.6	371.5	371.3
130°	391.3	391.7	392.1	392.5	392.8	392.9	392.9	392.9	392.9	392.9	392.8
132.5°	412.5	412.7	412.9	413.2	413.5	413.6	413.5	413.4	413.3	413.2	412.9
135°	440.3	441.0	441.7	442.4	443.2	443.5	443.5	443.5	443.5	443.5	443.3
137.5°	470.6	470.9	471.3	471.6	471.9	472.2	472.4	472.6	472.8	473.0	472.7
140°	490.8	491.1	491.3	491.5	491.7	491.9	491.9	491.9	491.9	491.9	491.7
142.5°	509.3	509.5	509.8	510.0	510.3	510.3	510.2	510.1	510.0	509.9	509.9
145°	534.9	535.4	535.8	536.3	536.8	537.1	537.2	537.3	537.4	537.5	537.4
147.5°	560.2	560.8	561.4	561.9	562.6	562.8	562.7	562.6	562.5	562.4	562.3
150°	575.7	576.3	576.7	577.2	577.7	577.9	577.9	577.9	577.9	577.9	577.9
152.5°	590.4	590.7	591.0	591.3	591.5	591.7	591.8	591.9	592.0	592.1	592.4
155°	612.8	612.8	612.8	612.8	612.8	612.7	612.7	612.6	612.5	612.3	612.7
157.5°	631.8	631.5	631.3	631.1	630.9	630.7	630.7	630.7	630.7	630.7	631.0
160°	642.9	642.8	642.7	642.6	642.4	642.3	642.2	642.2	642.0	641.9	642.2
162.5°	653.3	653.0	652.6	652.3	652.1	651.8	651.7	651.6	651.5	651.3	652.0
165°	667.1	666.8	666.4	666.1	665.7	665.4	665.2	665.0	664.7	664.5	665.2
167.5°	677.8	677.3	676.7	676.3	675.8	675.5	675.5	675.6	675.6	675.6	676.4
170°	683.8	683.2	682.6	682.0	681.4	681.2	681.3	681.4	681.6	681.6	682.4
172.5°	688.1	687.6	687.1	686.6	686.1	685.9	685.9	685.9	685.9	686.0	686.7
175°	694.0	693.4	692.9	692.2	691.6	691.3	691.2	691.1	690.9	690.8	691.6
177.5°	696.0	695.5	695.0	694.6	694.0	693.8	693.8	693.8	693.8	693.8	694.5
180°	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1



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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°	27.7	27.8	28.0	28.1	28.1	28.2	28.2	28.3
90°	13.3	13.9	14.7	15.2	15.5	15.6	15.9	16.1
92.5°	22.1	22.6	23.0	23.3	23.5	23.6	23.8	23.8
95°	41.6	41.9	42.3	42.5	42.5	42.5	42.5	42.5
97.5°	65.5	65.9	66.4	66.5	66.5	66.5	66.5	66.5
100°	82.8	82.9	83.2	83.3	83.3	83.3	83.3	83.3
102.5°	100.9	101.3	101.6	101.9	102.0	102.1	102.2	102.3
105°	128.7	129.0	129.4	129.7	130.1	130.4	130.8	131.2
107.5°	158.6	158.9	159.3	159.5	159.4	159.4	159.4	159.4
110°	178.5	178.3	178.0	178.1	178.5	178.8	179.2	179.6



TEST NUMBER: P332641-830

CATALOG NUMBER: S124DIP-S1020D590U830-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	200.0	199.9	199.9	199.9	200.0	200.0	200.1	200.2
115°	233.1	233.0	232.8	232.7	232.6	232.4	232.3	232.2
117.5°	264.9	264.5	264.0	263.7	263.4	263.3	263.0	262.8
120°	286.4	285.8	285.2	285.0	285.3	285.5	285.8	286.0
122.5°	308.3	307.9	307.5	307.1	306.6	306.2	305.8	305.4
125°	340.4	340.1	339.9	339.6	339.4	339.1	338.9	338.7
127.5°	371.0	370.8	370.5	370.3	370.1	369.9	369.8	369.6
130°	392.5	392.3	392.0	391.6	391.2	390.7	390.2	389.7
132.5°	412.7	412.5	412.3	412.0	411.8	411.6	411.4	411.2
135°	443.0	442.8	442.5	442.2	441.9	441.5	441.2	440.8
137.5°	472.3	472.0	471.7	471.6	471.6	471.7	471.8	471.9
140°	491.6	491.5	491.4	491.3	491.2	491.1	491.0	490.8
142.5°	509.9	509.9	509.8	509.8	509.8	509.8	509.7	509.7
145°	537.3	537.2	537.1	536.9	536.5	536.1	535.7	535.5
147.5°	562.2	562.1	562.0	561.9	561.8	561.7	561.6	561.5
150°	577.9	577.9	577.9	577.9	577.7	577.6	577.5	577.4
152.5°	592.7	593.0	593.2	593.2	593.0	592.6	592.3	592.0
155°	613.2	613.7	614.3	614.3	613.7	613.2	612.7	612.3
157.5°	631.4	631.8	632.2	632.1	631.7	631.3	630.8	630.5
160°	642.6	642.9	643.3	643.2	642.6	642.0	641.4	640.8
162.5°	652.6	653.3	653.9	653.9	653.4	652.7	652.1	651.6
165°	665.9	666.6	667.3	667.4	666.9	666.5	666.0	665.5
167.5°	677.0	677.8	678.5	678.4	677.8	677.0	676.3	675.5
170°	683.1	683.8	684.5	684.5	683.6	682.8	681.9	681.1
172.5°	687.6	688.4	689.2	689.2	688.3	687.5	686.6	685.9
175°	692.5	693.3	694.1	694.1	693.3	692.5	691.6	690.8
177.5°	695.1	695.8	696.4	696.4	695.7	694.9	694.1	693.3
180°	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1

(END OF REPORT)