

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

Luminaire Tested: **S124DIP-S1020D365U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332631
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-S1020D365U835-4F0-1E-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: 5890.9 lumens
Efficiency: N/A
Efficacy: 135.4 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

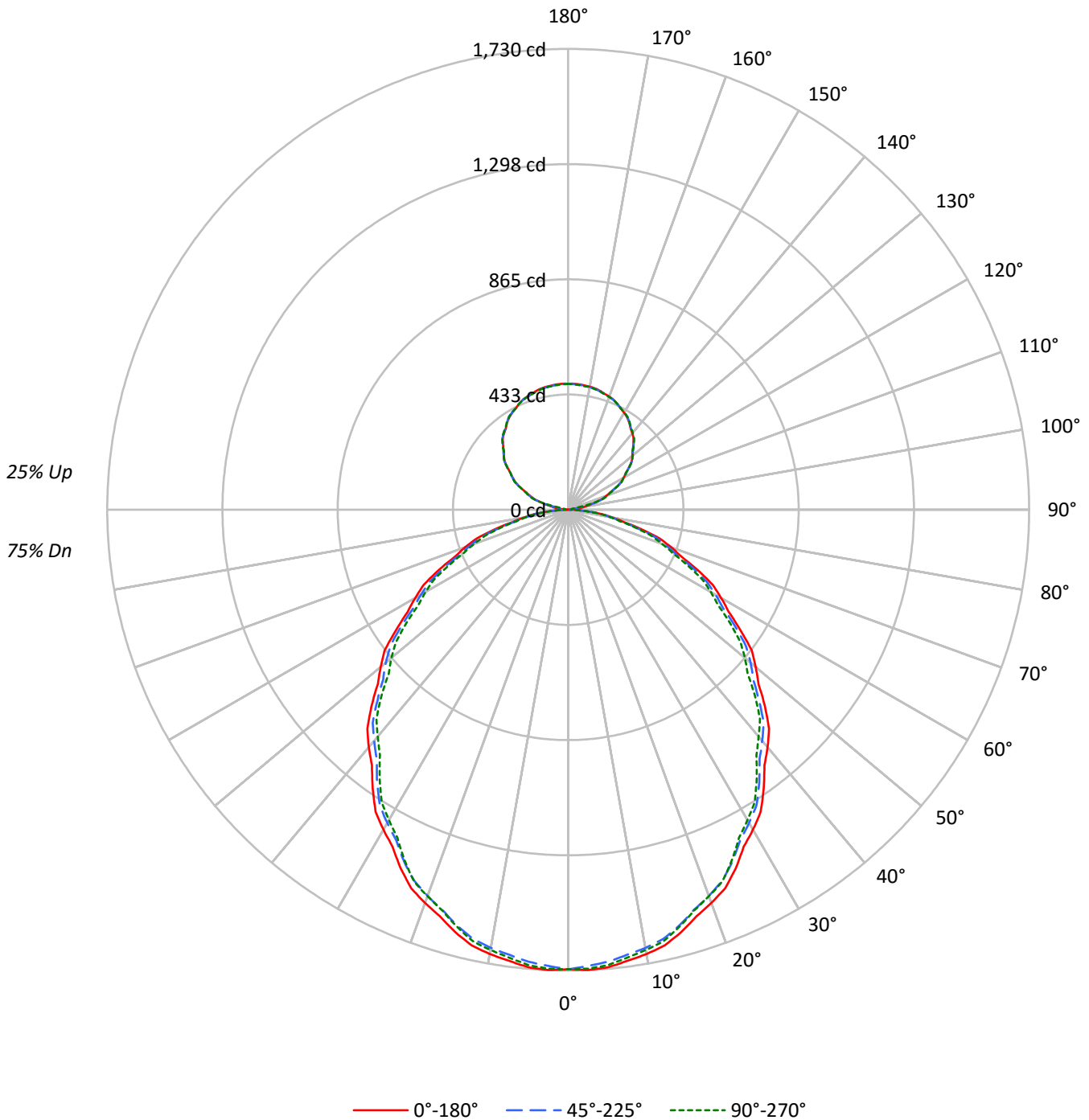
Input Watts (W): 43.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	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	79	79	79	79	79	75														
1	103	99	95	91	98	94	91	87	85	83	80	77	75	73	70	68	67	67	67	67	67	67	63														
2	94	86	80	74	89	82	77	72	75	70	66	68	64	61	62	59	56	56	56	56	56	56	53														
3	86	76	68	62	81	73	66	60	66	60	56	60	56	52	55	51	48	48	48	48	48	48	45														
4	79	67	59	53	75	64	57	51	59	53	48	54	49	44	49	45	41	41	41	41	41	41	38														
5	72	60	52	45	69	58	50	44	53	46	41	48	43	39	44	40	36	36	36	36	36	36	33														
6	67	54	46	40	63	52	44	38	48	41	36	44	38	34	40	35	32	32	32	32	32	32	29														
7	62	49	41	35	59	47	39	34	43	37	32	40	34	30	37	32	28	28	28	28	28	28	26														
8	58	45	37	31	55	43	35	30	40	33	29	37	31	27	34	29	25	25	25	25	25	25	23														
9	54	41	33	28	51	39	32	27	36	30	26	34	28	24	31	26	23	23	23	23	23	23	21														
10	50	38	30	25	48	36	29	25	34	28	23	31	26	22	29	24	21	21	21	21	21	21	19														

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13930	13930	13930
5°	13972	13804	13904
10°	13884	13691	13759
15°	13717	13497	13531
20°	13493	13256	13268
25°	13239	12981	12944
30°	12928	12656	12541
35°	12604	12318	12154
40°	12269	11934	11715
45°	11918	11555	11334
50°	11531	11218	10870
55°	11112	10781	10431
60°	10693	10291	9978
65°	10222	9824	9429
70°	9692	9203	8844
75°	8883	8453	8238
80°	7908	7583	7392
85°	6919	6660	6530



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	162.5	2.8
10°-20°	457.8	7.8
20°-30°	673.9	11.4
30°-40°	783.4	13.3
40°-50°	783.4	13.3
50°-60°	685.3	11.6
60°-70°	508.9	8.6
70°-80°	289.1	4.9
80°-90°	84.8	1.4
90°-100°	16.2	0.3
100°-110°	103.0	1.7
110°-120°	197.1	3.3
120°-130°	250.2	4.2
130°-140°	267.7	4.5
140°-150°	250.4	4.2
150°-160°	201.9	3.4
160°-170°	130.2	2.2
170°-180°	44.9	0.8
0°-30°	1294.2	22.0
0°-40°	2077.6	35.3
0°-60°	3546.4	60.2
0°-90°	4429.3	75.2
90°-120°	316.3	5.4
90°-150°	1084.6	18.4
90°-180°	1462.0	24.8
0°-180°	5890.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1726	1726	1726	1726	1726	
5°	1724	1718	1703	1718	1716	163
15°	1641	1635	1615	1622	1619	462
25°	1486	1476	1457	1458	1453	684
35°	1279	1269	1250	1240	1233	799
45°	1044	1034	1012	997	993	804
55°	790	784	766	750	741	707
65°	535	528	514	501	494	530
75°	285	278	271	266	264	303
85°	75	75	72	72	70	82
90°	1	5	8	10	11	5
95°	19	8	8	10	10	25
105°	106	108	110	113	101	111
115°	199	200	199	200	200	195
125°	279	280	280	281	281	249
135°	346	346	347	348	349	267
145°	399	400	400	401	402	249
155°	438	438	437	438	438	202
165°	462	460	460	463	460	130
175°	472	470	471	474	470	45
180°	472	472	472	472	472	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5
2.5°	1729.9	1729.2	1728.4	1727.7	1727.0	1725.2	1722.5	1719.8	1717.1	1714.4	1716.9
5°	1724.1	1722.9	1721.7	1720.4	1719.2	1716.9	1713.5	1710.1	1706.8	1703.4	1706.8
7.5°	1708.1	1706.8	1705.6	1704.4	1703.2	1700.7	1696.9	1693.2	1689.4	1685.7	1688.4
10°	1693.7	1692.5	1691.2	1690.0	1688.8	1686.2	1682.2	1678.2	1674.2	1670.2	1672.6
12.5°	1674.9	1673.7	1672.4	1671.2	1670.0	1667.2	1663.0	1658.8	1654.5	1650.3	1653.0
15°	1641.2	1639.9	1638.7	1637.5	1636.2	1633.3	1628.7	1624.1	1619.5	1614.9	1616.7
17.5°	1600.5	1599.0	1597.4	1595.9	1594.4	1591.4	1587.0	1582.7	1578.3	1574.0	1575.1
20°	1570.6	1569.1	1567.6	1566.0	1564.5	1561.4	1556.8	1552.2	1547.6	1543.0	1543.9
22.5°	1538.6	1536.5	1534.5	1532.5	1530.5	1527.1	1522.5	1517.9	1513.3	1508.7	1510.4
25°	1486.3	1484.2	1482.0	1479.8	1477.7	1474.5	1470.2	1465.9	1461.6	1457.3	1457.6
27.5°	1426.6	1424.4	1422.1	1419.9	1417.7	1414.6	1410.6	1406.6	1402.6	1398.6	1397.9
30°	1386.8	1384.3	1381.8	1379.4	1376.9	1373.7	1369.7	1365.7	1361.7	1357.7	1356.5
32.5°	1344.7	1342.5	1340.3	1338.1	1335.9	1332.6	1328.4	1324.2	1319.9	1315.7	1314.2
35°	1278.9	1276.8	1274.6	1272.5	1270.3	1267.1	1262.8	1258.5	1254.2	1249.9	1247.7
37.5°	1209.5	1207.5	1205.6	1203.6	1201.6	1198.4	1193.7	1189.1	1184.5	1179.9	1177.6
40°	1164.2	1161.7	1159.2	1156.8	1154.3	1150.8	1146.2	1141.6	1137.0	1132.4	1129.3
42.5°	1115.5	1114.0	1112.5	1111.1	1109.6	1106.3	1101.2	1096.1	1091.0	1085.9	1082.3
45°	1043.9	1041.7	1039.6	1037.4	1035.3	1031.7	1026.8	1021.9	1017.0	1012.1	1008.7
47.5°	968.9	967.5	966.0	964.5	963.0	960.0	955.5	950.9	946.4	941.8	938.0
50°	918.1	916.8	915.6	914.4	913.1	910.4	906.1	901.8	897.5	893.2	888.9
52.5°	868.3	866.8	865.3	863.9	862.4	859.4	854.8	850.3	845.7	841.2	837.4
55°	789.5	788.5	787.6	786.7	785.8	783.2	778.9	774.6	770.3	766.0	762.3
57.5°	714.3	713.2	712.2	711.1	710.1	707.4	703.2	699.0	694.7	690.5	687.0
60°	662.3	660.7	659.2	657.7	656.1	653.4	649.4	645.4	641.4	637.4	634.6
62.5°	611.4	610.1	608.8	607.5	606.2	603.5	599.2	595.0	590.7	586.5	584.0
65°	535.1	533.5	532.0	530.5	528.9	526.6	523.5	520.5	517.4	514.3	511.3
67.5°	458.2	456.8	455.4	454.0	452.5	450.4	447.4	444.5	441.5	438.6	435.6
70°	410.6	408.5	406.3	404.2	402.0	399.7	397.3	394.8	392.4	389.9	387.4
72.5°	359.8	357.6	355.5	353.3	351.2	349.1	347.1	345.2	343.2	341.2	339.3
75°	284.8	283.3	281.7	280.2	278.7	277.1	275.6	274.1	272.5	271.0	269.8
77.5°	213.2	212.5	211.8	211.2	210.5	209.5	208.1	206.8	205.4	204.1	203.7
80°	170.1	169.1	168.2	167.3	166.4	165.6	165.0	164.4	163.8	163.1	162.5
82.5°	128.0	127.6	127.2	126.7	126.3	126.0	125.9	125.8	125.7	125.5	125.2
85°	74.7	74.7	74.7	74.7	74.7	74.4	73.7	73.1	72.5	71.9	71.9
87.5°	29.0	28.9	28.8	28.8	28.7	28.6	28.5	28.3	28.2	28.1	28.2
90°	1.1	1.9	2.8	3.7	4.5	5.3	5.9	6.5	7.1	7.8	8.2
92.5°	4.5	4.5	4.5	4.6	4.6	5.0	5.6	6.2	6.9	7.5	8.0
95°	19.4	16.8	14.1	11.4	8.8	7.5	7.5	7.6	7.7	7.8	8.2
97.5°	41.3	42.9	44.6	46.3	47.9	44.4	35.6	26.9	18.1	9.3	9.4
100°	58.0	59.4	60.8	62.2	63.6	58.9	48.1	37.2	26.4	15.6	14.2
102.5°	76.6	77.7	78.7	79.7	80.8	80.6	79.2	77.8	76.3	74.9	60.5
105°	106.4	106.8	107.3	107.8	108.3	108.7	109.1	109.5	109.9	110.3	111.0
107.5°	134.0	134.2	134.5	134.7	135.0	135.3	135.9	136.4	136.9	137.5	137.8
110°	152.7	152.9	153.1	153.4	153.6	154.0	154.4	154.9	155.4	155.9	156.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	170.8	171.2	171.6	172.0	172.5	172.8	173.0	173.2	173.4	173.7	173.6
115°	198.6	198.9	199.1	199.3	199.6	199.6	199.6	199.5	199.4	199.3	199.5
117.5°	223.7	224.0	224.3	224.7	225.0	225.2	225.4	225.6	225.7	225.9	225.9
120°	240.7	241.0	241.3	241.6	241.9	242.0	242.0	241.9	241.8	241.7	241.9
122.5°	256.5	256.7	256.9	257.1	257.3	257.4	257.5	257.6	257.7	257.9	257.9
125°	279.2	279.5	279.8	280.1	280.5	280.5	280.4	280.2	280.1	279.9	280.1
127.5°	300.7	300.8	300.8	300.9	301.0	301.2	301.6	301.9	302.3	302.7	302.6
130°	314.5	314.6	314.7	314.8	314.9	315.0	315.2	315.5	315.7	316.0	316.0
132.5°	327.3	327.4	327.5	327.7	327.8	328.0	328.3	328.6	328.9	329.2	329.3
135°	346.3	346.3	346.2	346.1	346.0	346.1	346.5	346.8	347.1	347.4	347.6
137.5°	363.2	363.3	363.3	363.3	363.4	363.6	363.9	364.2	364.6	364.9	365.1
140°	374.3	374.4	374.6	374.7	374.9	375.0	375.2	375.4	375.5	375.7	375.9
142.5°	384.2	384.4	384.7	385.0	385.3	385.5	385.6	385.7	385.8	385.9	386.0
145°	399.4	399.6	399.8	400.1	400.3	400.4	400.4	400.4	400.4	400.4	400.5
147.5°	411.4	411.9	412.3	412.8	413.2	413.4	413.3	413.2	413.1	413.1	413.1
150°	420.2	420.5	420.8	421.2	421.5	421.6	421.5	421.4	421.3	421.3	421.3
152.5°	427.6	427.8	428.1	428.3	428.6	428.6	428.5	428.3	428.2	428.1	428.2
155°	437.9	438.0	438.0	438.1	438.2	438.1	437.9	437.6	437.4	437.2	437.5
157.5°	446.6	446.5	446.5	446.4	446.4	446.2	446.0	445.7	445.4	445.2	445.6
160°	451.7	451.4	451.2	451.0	450.7	450.6	450.5	450.4	450.3	450.2	450.7
162.5°	456.2	455.9	455.6	455.3	455.0	454.8	454.7	454.6	454.6	454.5	455.0
165°	461.9	461.5	461.1	460.7	460.3	460.1	460.1	460.1	460.1	460.1	460.8
167.5°	466.4	466.0	465.6	465.2	464.8	464.6	464.5	464.5	464.4	464.4	465.1
170°	469.0	468.5	468.0	467.6	467.1	466.9	467.0	467.1	467.1	467.2	467.8
172.5°	470.7	470.2	469.7	469.3	468.8	468.6	468.7	468.8	468.8	468.9	469.5
175°	472.5	472.0	471.6	471.1	470.6	470.4	470.5	470.6	470.7	470.7	471.5
177.5°	473.4	472.9	472.5	472.0	471.6	471.4	471.6	471.7	471.8	471.9	472.5
180°	472.5	472.5	472.5	472.5	472.5	472.5	472.5	472.5	472.5	472.5	472.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5	1725.5
2.5°	1719.3	1721.8	1724.3	1725.4	1725.1	1724.9	1724.6	1724.4
5°	1710.1	1713.5	1716.9	1718.3	1717.7	1717.0	1716.4	1715.8
7.5°	1691.1	1693.8	1696.5	1697.7	1697.3	1696.9	1696.5	1696.2
10°	1675.1	1677.6	1680.0	1680.9	1680.3	1679.7	1679.1	1678.5
12.5°	1655.7	1658.4	1661.1	1662.0	1661.2	1660.3	1659.4	1658.6
15°	1618.6	1620.4	1622.3	1622.7	1621.8	1620.9	1620.0	1619.0
17.5°	1576.3	1577.5	1578.6	1578.9	1578.3	1577.7	1577.1	1576.4
20°	1544.8	1545.8	1546.7	1546.8	1546.2	1545.6	1545.0	1544.4
22.5°	1512.0	1513.7	1515.3	1515.6	1514.5	1513.4	1512.3	1511.2
25°	1457.9	1458.2	1458.5	1458.0	1456.8	1455.6	1454.3	1453.1
27.5°	1397.2	1396.4	1395.7	1394.6	1393.0	1391.5	1389.9	1388.4
30°	1355.3	1354.0	1352.8	1351.4	1349.9	1348.3	1346.8	1345.3
32.5°	1312.7	1311.3	1309.8	1308.3	1306.7	1305.2	1303.7	1302.1
35°	1245.6	1243.4	1241.3	1239.4	1237.9	1236.4	1234.8	1233.3
37.5°	1175.2	1172.9	1170.6	1168.4	1166.4	1164.3	1162.3	1160.3
40°	1126.2	1123.1	1120.1	1117.8	1116.2	1114.7	1113.2	1111.6
42.5°	1078.8	1075.2	1071.6	1069.3	1068.3	1067.2	1066.2	1065.2
45°	1005.3	1001.9	998.5	996.4	995.5	994.6	993.6	992.7
47.5°	934.2	930.4	926.6	923.5	921.2	918.8	916.5	914.2
50°	884.6	880.3	876.0	872.9	871.0	869.2	867.4	865.5
52.5°	833.6	829.7	825.9	822.9	820.5	818.2	815.9	813.5
55°	758.6	754.9	751.2	748.5	746.6	744.8	742.9	741.1
57.5°	683.5	680.0	676.5	673.8	672.0	670.3	668.5	666.7
60°	631.9	629.1	626.3	624.2	622.6	621.1	619.6	618.0
62.5°	581.5	578.9	576.4	574.4	572.9	571.3	569.8	568.3
65°	508.2	505.1	502.0	499.7	498.2	496.7	495.1	493.6
67.5°	432.7	429.7	426.8	425.1	424.6	424.2	423.8	423.4
70°	385.0	382.5	380.1	378.4	377.5	376.5	375.6	374.7
72.5°	337.3	335.3	333.4	331.9	331.0	330.1	329.2	328.2
75°	268.5	267.3	266.1	265.3	265.0	264.7	264.4	264.1
77.5°	203.3	203.0	202.6	202.0	201.2	200.4	199.6	198.8
80°	161.9	161.3	160.7	160.2	159.9	159.6	159.3	159.0
82.5°	124.8	124.4	124.1	123.7	123.4	123.1	122.8	122.5
85°	71.9	71.9	71.9	71.7	71.4	71.1	70.8	70.5
87.5°	28.3	28.4	28.5	28.5	28.6	28.6	28.6	28.7
90°	8.7	9.2	9.7	10.0	10.1	10.3	10.4	10.6
92.5°	8.4	8.9	9.4	9.6	9.7	9.7	9.7	9.8
95°	8.7	9.2	9.7	9.9	10.0	10.1	10.2	10.2
97.5°	9.4	9.5	9.5	9.6	9.7	9.7	9.8	9.9
100°	12.9	11.5	10.2	9.6	9.7	9.7	9.8	9.9
102.5°	46.1	31.7	17.3	10.1	10.1	10.1	10.2	10.2
105°	111.7	112.4	113.1	112.0	109.2	106.4	103.5	100.7
107.5°	138.2	138.5	138.9	139.2	139.5	139.8	140.1	140.4
110°	156.2	156.3	156.5	156.7	156.9	157.2	157.4	157.6



TEST NUMBER: P332631

CATALOG NUMBER: S124DIP-S1020D365U835-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	173.6	173.6	173.5	173.7	174.0	174.3	174.6	174.9
115°	199.6	199.8	200.0	200.0	200.0	200.0	200.0	200.0
117.5°	225.8	225.8	225.8	225.7	225.7	225.7	225.7	225.6
120°	242.0	242.2	242.4	242.4	242.2	242.0	241.9	241.7
122.5°	258.0	258.1	258.2	258.2	258.0	257.9	257.7	257.6
125°	280.4	280.6	280.8	281.0	281.1	281.2	281.2	281.3
127.5°	302.6	302.5	302.5	302.4	302.4	302.3	302.2	302.2
130°	316.1	316.2	316.3	316.3	316.3	316.3	316.3	316.3
132.5°	329.4	329.5	329.6	329.6	329.5	329.4	329.4	329.3
135°	347.7	347.9	348.0	348.2	348.3	348.5	348.7	348.8
137.5°	365.3	365.5	365.6	365.7	365.6	365.6	365.5	365.5
140°	376.1	376.4	376.6	376.8	376.9	376.9	377.0	377.1
142.5°	386.2	386.4	386.5	386.6	386.7	386.7	386.7	386.7
145°	400.6	400.7	400.7	400.8	401.0	401.2	401.3	401.5
147.5°	413.2	413.3	413.3	413.4	413.5	413.5	413.6	413.7
150°	421.3	421.3	421.3	421.3	421.4	421.5	421.5	421.6
152.5°	428.3	428.4	428.6	428.6	428.5	428.5	428.5	428.4
155°	437.8	438.1	438.4	438.5	438.2	438.0	437.8	437.5
157.5°	446.0	446.4	446.8	446.8	446.4	446.0	445.6	445.2
160°	451.2	451.7	452.1	452.1	451.7	451.2	450.7	450.2
162.5°	455.4	455.9	456.4	456.3	455.8	455.3	454.7	454.2
165°	461.4	462.0	462.7	462.6	461.9	461.2	460.5	459.8
167.5°	465.8	466.5	467.1	467.1	466.3	465.5	464.7	464.0
170°	468.5	469.1	469.7	469.6	468.9	468.1	467.3	466.5
172.5°	470.2	470.8	471.4	471.3	470.5	469.6	468.8	467.9
175°	472.2	472.9	473.6	473.5	472.5	471.6	470.6	469.7
177.5°	473.0	473.5	474.0	473.8	473.1	472.3	471.6	470.8
180°	472.5	472.5	472.5	472.5	472.5	472.5	472.5	472.5

(END OF REPORT)