

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: P332633-840

Luminaire Tested: **S124DIP-S1020D365U840-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332633-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIP-S1020D365U840-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5793.8 lumens
Efficiency: N/A
Efficacy: 133.2 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

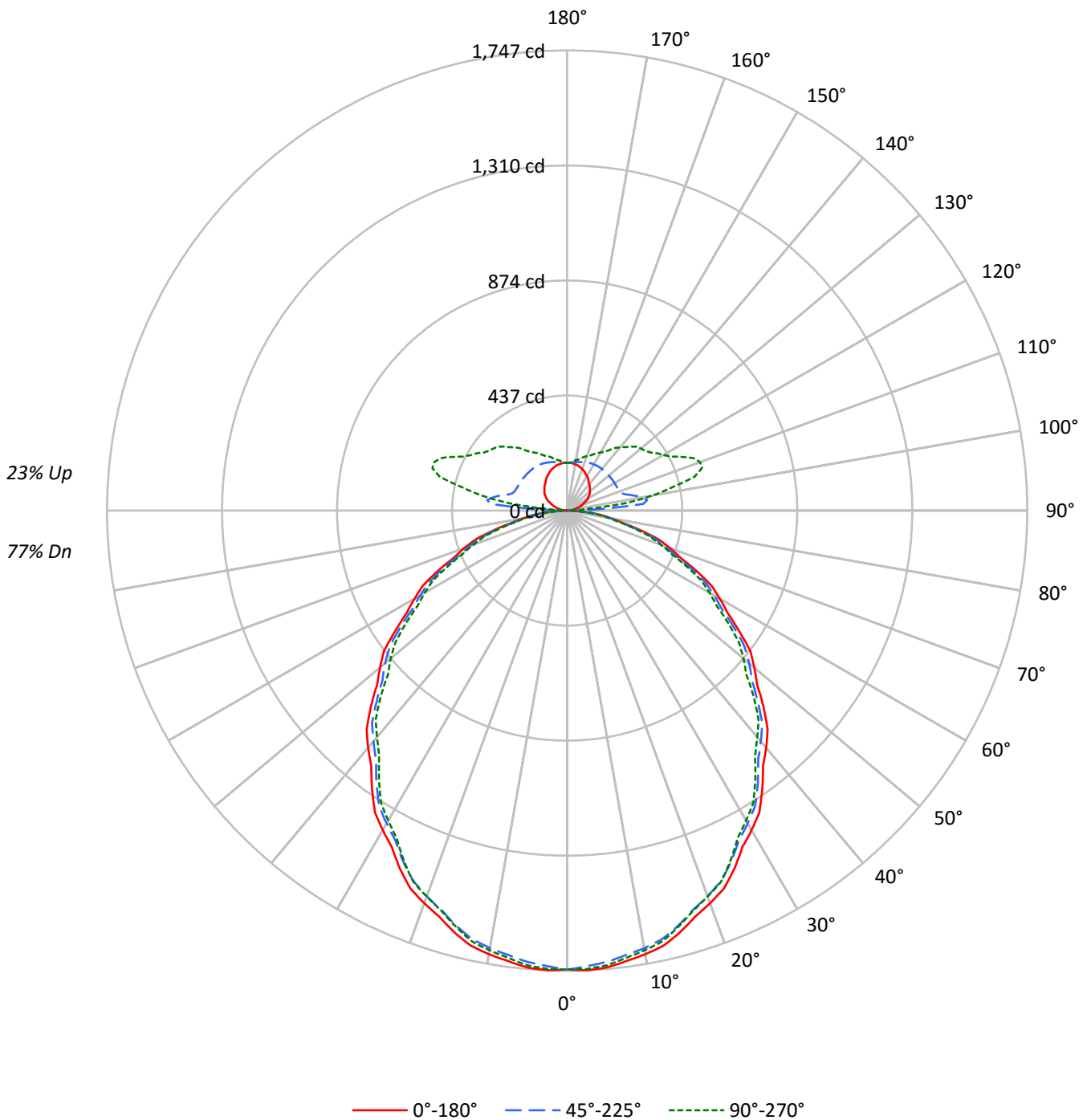
Input Watts (W): 43.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				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	99	95	92	99	95	91	88	86	84	81	79	77	75	72	70	68	65
2	95	87	80	75	90	83	77	72	76	71	67	69	65	62	63	60	58	54
3	86	76	69	62	82	73	66	60	67	61	56	61	57	53	56	52	49	46
4	79	68	59	53	75	65	57	51	60	53	48	55	49	45	50	46	42	39
5	73	60	52	46	69	58	50	44	53	47	42	49	44	39	45	41	37	34
6	67	54	46	40	64	52	44	39	48	42	37	44	39	35	41	36	33	30
7	62	49	41	35	59	47	40	34	44	37	32	41	35	31	37	33	29	27
8	58	45	37	31	55	43	36	30	40	34	29	37	32	27	34	30	26	24
9	54	41	33	28	51	40	32	27	37	31	26	34	29	25	32	27	24	22
10	51	38	30	25	48	37	30	25	34	28	24	32	26	23	30	25	21	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14067	14067	14067
5°	14109	13940	14041
10°	14021	13827	13896
15°	13852	13630	13665
20°	13626	13387	13399
25°	13370	13109	13071
30°	13055	12781	12665
35°	12728	12439	12275
40°	12390	12052	11830
45°	12036	11669	11445
50°	11645	11328	10977
55°	11222	10888	10534
60°	10798	10393	10077
65°	10323	9922	9522
70°	9788	9293	8932
75°	8971	8537	8319
80°	7987	7657	7466
85°	6984	6725	6595



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	164.1	2.8
10°-20°	462.4	8.0
20°-30°	680.5	11.7
30°-40°	791.1	13.7
40°-50°	791.2	13.7
50°-60°	692.1	11.9
60°-70°	514.0	8.9
70°-80°	292.0	5.0
80°-90°	85.3	1.5
90°-100°	131.2	2.3
100°-110°	273.1	4.7
110°-120°	244.6	4.2
120°-130°	205.8	3.6
130°-140°	171.6	3.0
140°-150°	131.1	2.3
150°-160°	92.1	1.6
160°-170°	54.2	0.9
170°-180°	17.6	0.3
0°-30°	1307.0	22.6
0°-40°	2098.1	36.2
0°-60°	3581.3	61.8
0°-90°	4472.6	77.2
90°-120°	648.9	11.2
90°-150°	1157.3	20.0
90°-180°	1321.0	22.8
0°-180°	5793.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1742	1742	1742	1742	1742	
5°	1741	1735	1720	1735	1733	165
15°	1657	1651	1631	1638	1635	467
25°	1501	1491	1472	1473	1467	690
35°	1292	1281	1262	1253	1246	807
45°	1054	1044	1022	1007	1002	812
55°	797	792	774	757	748	714
65°	540	533	519	506	498	535
75°	288	281	274	268	267	306
85°	75	75	73	72	71	83
90°	0	3	6	7	8	5
95°	12	37	291	144	87	13
105°	42	60	234	504	502	45
115°	74	92	209	401	482	73
125°	102	122	208	341	385	91
135°	122	145	206	303	344	94
145°	140	161	205	256	281	88
155°	160	172	199	226	235	74
165°	174	179	191	202	205	49
175°	181	182	183	186	185	17
180°	182	182	182	182	182	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5
2.5°	1747.0	1746.3	1745.5	1744.7	1744.0	1742.2	1739.5	1736.8	1734.0	1731.3	1733.8
5°	1741.1	1739.9	1738.7	1737.4	1736.2	1733.8	1730.4	1727.0	1723.6	1720.2	1723.6
7.5°	1725.0	1723.6	1722.4	1721.2	1720.0	1717.5	1713.6	1709.9	1706.1	1702.3	1705.1
10°	1710.4	1709.2	1707.9	1706.7	1705.5	1702.8	1698.8	1694.8	1690.7	1686.7	1689.1
12.5°	1691.4	1690.2	1688.9	1687.7	1686.5	1683.6	1679.4	1675.2	1670.8	1666.6	1669.3
15°	1657.4	1656.1	1654.9	1653.7	1652.3	1649.4	1644.8	1640.1	1635.5	1630.8	1632.6
17.5°	1616.3	1614.8	1613.2	1611.6	1610.1	1607.1	1602.7	1598.3	1593.9	1589.5	1590.6
20°	1586.1	1584.6	1583.1	1581.4	1579.9	1576.8	1572.2	1567.5	1562.9	1558.2	1559.1
22.5°	1553.8	1551.7	1549.6	1547.6	1545.6	1542.2	1537.5	1532.9	1528.2	1523.6	1525.3
25°	1501.0	1498.8	1496.6	1494.4	1492.3	1489.0	1484.7	1480.4	1476.0	1471.7	1472.0
27.5°	1440.7	1438.5	1436.1	1433.9	1431.7	1428.6	1424.5	1420.5	1416.4	1412.4	1411.7
30°	1400.5	1398.0	1395.4	1393.0	1390.5	1387.3	1383.2	1379.2	1375.1	1371.1	1369.9
32.5°	1358.0	1355.7	1353.5	1351.3	1349.1	1345.7	1341.5	1337.3	1332.9	1328.7	1327.2
35°	1291.5	1289.4	1287.2	1285.1	1282.8	1279.6	1275.3	1270.9	1266.6	1262.2	1260.0
37.5°	1221.4	1219.4	1217.5	1215.5	1213.5	1210.2	1205.5	1200.8	1196.2	1191.5	1189.2
40°	1175.7	1173.2	1170.6	1168.2	1165.7	1162.2	1157.5	1152.9	1148.2	1143.6	1140.4
42.5°	1126.5	1125.0	1123.5	1122.1	1120.5	1117.2	1112.1	1106.9	1101.8	1096.6	1093.0
45°	1054.2	1052.0	1049.9	1047.6	1045.5	1041.9	1036.9	1032.0	1027.0	1022.1	1018.7
47.5°	978.5	977.0	975.5	974.0	972.5	969.5	964.9	960.3	955.7	951.1	947.3
50°	927.2	925.8	924.6	923.4	922.1	919.4	915.0	910.7	906.4	902.0	897.7
52.5°	876.9	875.4	873.8	872.4	870.9	867.9	863.2	858.7	854.0	849.5	845.7
55°	797.3	796.3	795.4	794.5	793.6	790.9	786.6	782.2	777.9	773.6	769.8
57.5°	721.3	720.2	719.2	718.1	717.1	714.4	710.1	705.9	701.6	697.3	693.8
60°	668.8	667.2	665.7	664.2	662.6	659.8	655.8	651.8	647.7	643.7	640.9
62.5°	617.4	616.1	614.8	613.5	612.2	609.5	605.1	600.9	596.5	592.3	589.8
65°	540.4	538.8	537.2	535.7	534.1	531.8	528.7	525.6	522.5	519.4	516.3
67.5°	462.7	461.3	459.9	458.5	457.0	454.8	451.8	448.9	445.9	442.9	439.9
70°	414.7	412.5	410.3	408.2	406.0	403.6	401.2	398.7	396.3	393.7	391.2
72.5°	363.3	361.1	359.0	356.8	354.7	352.5	350.5	348.6	346.6	344.6	342.6
75°	287.6	286.1	284.5	283.0	281.4	279.8	278.3	276.8	275.2	273.7	272.5
77.5°	215.3	214.6	213.9	213.3	212.6	211.6	210.2	208.8	207.4	206.1	205.7
80°	171.8	170.8	169.9	169.0	168.0	167.2	166.6	166.0	165.4	164.7	164.1
82.5°	129.3	128.9	128.5	127.9	127.5	127.2	127.1	127.0	126.9	126.7	126.4
85°	75.4	75.4	75.4	75.4	75.4	75.1	74.4	73.8	73.2	72.6	72.6
87.5°	29.1	29.0	29.0	28.8	28.6	28.4	28.6	28.3	28.2	28.1	28.0
90°	0.4	1.1	2.1	2.5	2.8	2.8	4.9	4.9	5.8	6.5	6.1
92.5°	4.0	6.0	9.3	13.6	18.9	26.3	44.4	72.1	99.1	113.2	94.3
95°	11.8	12.8	16.5	21.1	29.6	44.6	75.6	134.2	219.5	290.8	299.1
97.5°	21.1	21.1	24.2	28.5	35.9	48.4	72.3	120.7	205.4	306.4	375.8
100°	27.2	27.2	29.6	33.9	40.7	52.1	73.2	113.5	186.3	287.0	378.3
102.5°	32.8	33.4	35.6	39.6	46.2	57.0	76.0	111.5	173.5	262.7	356.9
105°	41.8	42.8	44.6	48.9	55.3	65.6	82.8	112.4	162.4	234.1	318.0
107.5°	51.6	52.3	54.1	58.7	64.8	75.0	90.7	117.8	160.4	218.1	286.6
110°	58.2	58.9	60.7	64.9	71.4	81.0	96.7	121.7	161.0	212.7	270.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	64.4	65.1	67.3	71.2	77.7	87.3	102.4	126.0	162.7	210.2	262.1
115°	73.5	74.6	77.1	80.7	87.5	97.0	111.4	132.8	165.9	208.8	253.8
117.5°	82.9	83.9	86.1	90.1	96.4	106.4	120.0	139.7	169.5	208.4	250.0
120°	89.3	90.0	92.4	96.3	102.4	112.4	126.0	144.5	172.1	208.4	248.0
122.5°	94.9	95.6	98.2	101.8	108.5	118.2	131.7	149.2	174.6	208.1	245.8
125°	102.4	103.8	106.0	110.0	116.7	126.7	139.6	155.9	178.4	207.7	242.0
127.5°	109.1	110.2	112.8	117.2	124.3	134.4	146.8	161.9	181.6	206.9	236.9
130°	112.8	114.2	117.0	122.4	129.2	139.6	151.7	165.6	183.8	206.6	233.8
132.5°	116.5	117.6	121.4	126.4	133.8	143.5	155.7	169.4	185.8	206.4	231.0
135°	121.7	123.1	126.7	132.8	140.3	149.6	161.3	174.2	188.8	205.9	226.6
137.5°	126.9	128.3	132.2	137.9	145.7	154.6	165.6	177.6	190.6	205.9	223.0
140°	130.7	131.7	135.6	141.7	149.2	157.7	168.4	179.9	192.0	205.6	221.0
142.5°	134.6	135.7	139.4	145.1	152.3	160.6	171.1	181.6	193.2	205.6	219.2
145°	140.3	141.4	144.9	149.9	156.7	164.5	173.8	183.5	193.8	204.9	216.3
147.5°	146.6	146.9	150.2	155.2	160.9	167.9	176.6	185.1	194.2	203.6	213.7
150°	150.6	151.0	153.8	158.1	163.5	170.3	178.1	185.9	194.2	202.7	211.7
152.5°	154.3	154.4	157.2	161.3	166.0	172.3	179.3	186.5	193.6	201.3	209.3
155°	159.6	159.9	162.1	165.6	169.6	174.9	181.0	187.0	192.8	199.1	205.9
157.5°	164.6	164.6	166.6	169.4	172.8	177.0	182.2	187.0	191.8	196.9	202.5
160°	167.7	167.7	169.2	171.7	174.5	178.4	182.8	187.0	191.0	195.2	199.9
162.5°	170.6	170.4	171.5	173.7	176.2	179.4	183.3	187.0	190.1	193.5	197.6
165°	173.8	173.8	174.5	176.3	178.1	180.3	183.5	186.3	188.4	191.0	193.8
167.5°	177.0	176.6	177.0	178.3	179.4	181.1	183.4	185.4	186.7	188.3	190.4
170°	178.4	178.1	178.4	179.6	180.3	181.3	183.1	184.9	185.6	186.6	188.1
172.5°	179.9	179.6	179.6	180.4	180.8	181.6	182.8	184.3	184.5	184.9	186.1
175°	181.3	181.0	181.0	181.3	181.7	181.7	182.4	183.5	183.1	183.1	183.8
177.5°	182.0	181.7	181.4	181.7	181.7	181.7	182.0	182.5	182.0	182.0	182.3
180°	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5
2.5°	1736.3	1738.8	1741.3	1742.4	1742.1	1741.9	1741.6	1741.4
5°	1727.0	1730.4	1733.8	1735.3	1734.6	1733.9	1733.3	1732.7
7.5°	1707.8	1710.5	1713.2	1714.4	1714.0	1713.6	1713.2	1712.9
10°	1691.6	1694.1	1696.6	1697.5	1696.9	1696.3	1695.7	1695.1
12.5°	1672.0	1674.8	1677.5	1678.4	1677.6	1676.7	1675.8	1675.0
15°	1634.6	1636.4	1638.3	1638.7	1637.8	1636.9	1636.0	1635.0
17.5°	1591.9	1593.1	1594.2	1594.5	1593.9	1593.3	1592.7	1592.0
20°	1560.0	1561.0	1562.0	1562.1	1561.5	1560.8	1560.2	1559.6
22.5°	1526.9	1528.6	1530.2	1530.6	1529.4	1528.3	1527.2	1526.1
25°	1472.3	1472.6	1472.9	1472.4	1471.2	1470.0	1468.6	1467.4
27.5°	1411.0	1410.2	1409.5	1408.4	1406.7	1405.2	1403.6	1402.1
30°	1368.7	1367.4	1366.1	1364.7	1363.2	1361.6	1360.1	1358.6
32.5°	1325.6	1324.2	1322.7	1321.2	1319.6	1318.1	1316.6	1314.9
35°	1257.9	1255.7	1253.5	1251.6	1250.1	1248.6	1247.0	1245.5
37.5°	1186.8	1184.5	1182.1	1179.9	1177.9	1175.8	1173.8	1171.7
40°	1137.3	1134.2	1131.1	1128.8	1127.2	1125.7	1124.2	1122.6
42.5°	1089.4	1085.8	1082.2	1079.8	1078.8	1077.7	1076.7	1075.7
45°	1015.2	1011.8	1008.4	1006.2	1005.3	1004.4	1003.4	1002.5
47.5°	943.4	939.6	935.7	932.6	930.3	927.9	925.5	923.2
50°	893.3	889.0	884.6	881.5	879.6	877.8	876.0	874.0
52.5°	841.8	837.9	834.0	831.0	828.6	826.3	823.9	821.5
55°	766.1	762.3	758.6	755.9	754.0	752.1	750.2	748.4
57.5°	690.2	686.7	683.2	680.4	678.6	676.9	675.1	673.3
60°	638.1	635.3	632.5	630.4	628.7	627.2	625.7	624.1
62.5°	587.2	584.6	582.1	580.1	578.6	576.9	575.4	573.9
65°	513.2	510.1	507.0	504.6	503.1	501.6	500.0	498.5
67.5°	437.0	433.9	431.0	429.3	428.8	428.4	428.0	427.6
70°	388.8	386.3	383.8	382.1	381.2	380.2	379.3	378.4
72.5°	340.6	338.6	336.7	335.2	334.3	333.4	332.4	331.4
75°	271.1	269.9	268.7	267.9	267.6	267.3	267.0	266.7
77.5°	205.3	205.0	204.6	204.0	203.2	202.4	201.6	200.8
80°	163.5	162.9	162.3	161.8	161.5	161.2	160.9	160.6
82.5°	126.0	125.6	125.3	124.9	124.6	124.3	124.0	123.7
85°	72.6	72.6	72.6	72.4	72.1	71.8	71.5	71.2
87.5°	28.1	28.2	28.3	28.3	28.3	28.4	28.3	28.3
90°	6.5	6.8	7.2	7.2	7.5	7.9	7.5	7.5
92.5°	70.1	52.7	42.0	34.8	30.6	28.7	27.5	27.5
95°	264.5	209.1	161.3	126.7	109.2	98.2	91.7	87.1
97.5°	390.7	370.2	335.3	298.0	272.4	251.0	240.2	232.8
100°	430.4	437.6	420.1	393.6	362.6	340.8	330.1	327.3
102.5°	428.5	463.8	468.9	457.9	438.9	423.1	411.8	409.5
105°	399.7	461.5	496.9	511.5	512.2	509.3	504.3	502.2
107.5°	359.0	424.7	474.4	506.3	523.9	532.1	535.6	536.5
110°	334.5	396.2	448.0	487.2	512.5	527.6	533.9	537.1



TEST NUMBER: P332633-840

CATALOG NUMBER: S124DIP-S1020D365U840-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	316.4	371.0	419.9	459.2	488.0	506.1	515.1	520.3
115°	298.4	342.2	384.1	418.3	446.5	467.9	479.4	482.2
117.5°	289.5	325.9	358.7	387.8	411.8	429.8	441.3	443.5
120°	285.5	318.7	347.3	372.6	392.9	408.7	418.0	421.9
122.5°	282.1	314.2	340.1	362.3	379.5	392.9	400.8	404.8
125°	276.3	306.9	331.5	351.2	365.5	375.9	382.6	384.8
127.5°	269.1	298.4	323.1	341.6	356.0	365.2	370.9	373.0
130°	263.4	291.6	315.9	334.8	349.4	358.3	364.1	366.2
132.5°	257.4	283.9	307.6	326.5	340.8	350.9	356.4	358.5
135°	249.1	272.4	294.1	311.9	326.2	336.2	341.9	344.1
137.5°	241.7	261.3	279.6	295.7	309.1	318.9	323.7	326.2
140°	237.3	254.1	270.1	285.2	297.7	305.5	310.5	313.4
142.5°	233.4	248.1	261.9	274.9	286.0	293.3	297.7	299.6
145°	227.7	239.8	250.5	260.5	269.4	275.5	279.1	280.8
147.5°	223.1	232.7	241.3	249.1	255.7	260.9	263.6	264.3
150°	220.3	228.4	235.6	242.0	247.7	252.4	254.5	254.8
152.5°	217.1	224.2	230.8	236.0	240.9	244.6	245.9	246.3
155°	212.4	218.0	223.4	227.7	231.3	234.1	235.2	235.2
157.5°	207.3	212.1	216.6	220.0	222.7	224.9	225.5	225.5
160°	204.2	208.0	212.0	214.9	217.0	219.1	219.5	219.5
162.5°	201.1	204.4	207.4	210.1	211.6	213.7	214.1	213.8
165°	196.6	198.8	201.3	203.1	204.5	205.9	205.6	205.2
167.5°	192.5	194.1	196.1	197.1	197.8	198.8	198.7	198.4
170°	189.9	191.0	192.4	193.5	194.2	194.5	194.2	194.2
172.5°	187.6	188.3	189.2	190.1	190.5	190.8	190.5	189.9
175°	184.5	184.9	185.6	185.6	185.6	186.3	185.6	184.9
177.5°	182.5	182.8	182.8	183.1	182.8	183.1	182.5	182.0
180°	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7

(END OF REPORT)