

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: P332678-840

Luminaire Tested: **S124DIP-S1195D365U840-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332678-840  
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-S1195D365U840-4F0-1E-UDD-F4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1195 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: 6486.6 lumens  
Efficiency: N/A  
Efficacy: 130.3 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

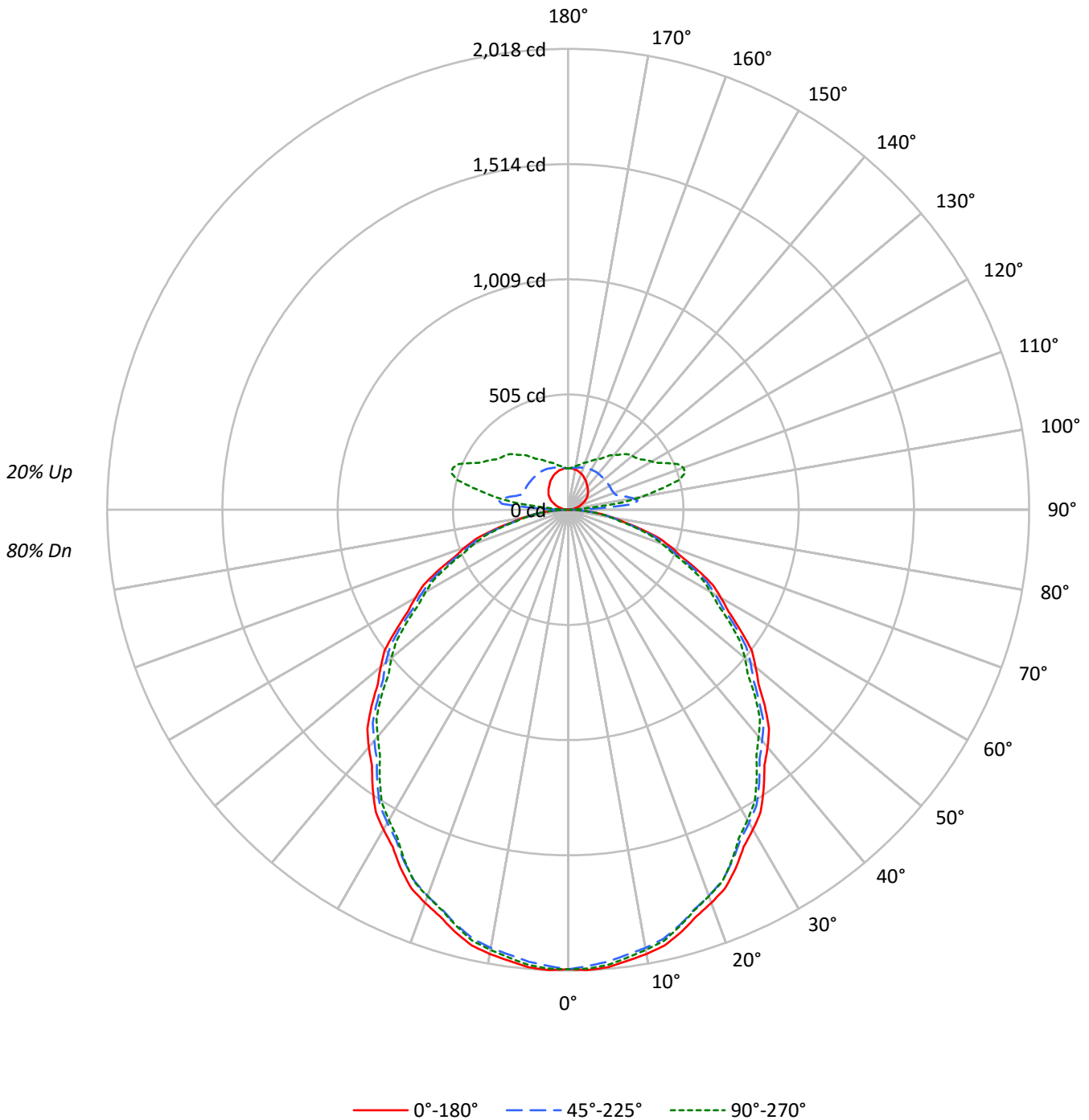
Input Watts (W): 49.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	114	114	114	114	109	109	109	109	100	100	100	91	91	91	83	83	83	80
1	104	100	96	92	100	96	92	89	88	85	82	80	78	76	74	72	70	67
2	95	87	81	75	91	84	78	73	77	72	68	71	67	64	65	62	59	56
3	87	77	69	63	83	74	67	61	68	62	57	62	58	54	57	54	50	47
4	80	68	60	53	76	65	58	52	60	54	49	56	50	46	51	47	43	41
5	73	61	52	46	70	59	51	45	54	48	42	50	45	40	46	42	38	35
6	68	55	46	40	64	53	45	39	49	42	37	45	40	35	42	37	33	31
7	63	50	41	35	60	48	40	35	45	38	33	41	36	31	38	34	30	28
8	58	45	37	32	56	44	36	31	41	34	29	38	32	28	35	30	27	25
9	54	41	34	28	52	40	33	28	37	31	27	35	29	25	33	28	24	22
10	51	38	31	26	49	37	30	25	35	28	24	32	27	23	30	26	22	20

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	16247	16247	16247
5°	16295	16100	16216
10°	16193	15969	16047
15°	15998	15742	15782
20°	15738	15460	15474
25°	15441	15139	15097
30°	15077	14762	14626
35°	14701	14366	14177
40°	14309	13918	13663
45°	13900	13476	13218
50°	13448	13083	12679
55°	12960	12573	12165
60°	12471	12003	11638
65°	11922	11459	10997
70°	11306	10733	10315
75°	10359	9860	9607
80°	9219	8847	8619
85°	8068	7762	7614



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	189.5	2.9
10°-20°	534.0	8.2
20°-30°	786.0	12.1
30°-40°	913.7	14.1
40°-50°	913.7	14.1
50°-60°	799.3	12.3
60°-70°	593.6	9.2
70°-80°	337.2	5.2
80°-90°	98.3	1.5
90°-100°	131.2	2.0
100°-110°	273.1	4.2
110°-120°	244.6	3.8
120°-130°	205.8	3.2
130°-140°	171.6	2.6
140°-150°	131.1	2.0
150°-160°	92.1	1.4
160°-170°	54.2	0.8
170°-180°	17.6	0.3
0°-30°	1509.5	23.3
0°-40°	2423.2	37.4
0°-60°	4136.2	63.8
0°-90°	5165.3	79.6
90°-120°	648.9	10.0
90°-150°	1157.3	17.8
90°-180°	1321.0	20.4
0°-180°	6486.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2012	2012	2012	2012	2012	
5°	2011	2004	1987	2003	2001	191
15°	1914	1907	1884	1892	1888	539
25°	1734	1722	1700	1701	1695	797
35°	1492	1480	1458	1447	1438	932
45°	1218	1205	1180	1163	1158	938
55°	921	915	893	875	864	824
65°	624	616	600	584	576	618
75°	332	324	316	310	308	353
85°	87	87	84	84	82	96
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°	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5
2.5°	2017.6	2016.8	2015.9	2015.1	2014.2	2012.2	2009.0	2005.9	2002.8	1999.6	2002.5
5°	2010.8	2009.4	2008.0	2006.6	2005.2	2002.5	1998.5	1994.6	1990.6	1986.7	1990.6
7.5°	1992.2	1990.7	1989.3	1987.8	1986.4	1983.6	1979.1	1974.8	1970.4	1966.0	1969.2
10°	1975.4	1974.0	1972.6	1971.1	1969.6	1966.6	1962.0	1957.3	1952.7	1948.0	1950.9
12.5°	1953.5	1952.1	1950.6	1949.1	1947.7	1944.5	1939.6	1934.7	1929.8	1924.8	1927.9
15°	1914.1	1912.7	1911.3	1909.9	1908.3	1905.0	1899.6	1894.2	1888.9	1883.5	1885.6
17.5°	1866.7	1864.9	1863.1	1861.4	1859.6	1856.1	1851.0	1845.9	1840.9	1835.7	1837.1
20°	1831.9	1830.1	1828.3	1826.5	1824.7	1821.1	1815.7	1810.4	1805.0	1799.6	1800.7
22.5°	1794.4	1792.1	1789.8	1787.4	1785.0	1781.1	1775.7	1770.4	1765.0	1759.6	1761.6
25°	1733.5	1731.0	1728.5	1726.0	1723.4	1719.7	1714.6	1709.7	1704.7	1699.6	1700.0
27.5°	1663.9	1661.2	1658.7	1656.1	1653.6	1649.9	1645.3	1640.6	1636.0	1631.2	1630.4
30°	1617.4	1614.6	1611.6	1608.8	1606.0	1602.2	1597.5	1592.9	1588.2	1583.6	1582.2
32.5°	1568.4	1565.8	1563.3	1560.6	1558.0	1554.3	1549.3	1544.4	1539.4	1534.5	1532.8
35°	1491.7	1489.1	1486.6	1484.1	1481.6	1477.8	1472.8	1467.8	1462.8	1457.7	1455.2
37.5°	1410.7	1408.4	1406.1	1403.8	1401.5	1397.7	1392.3	1386.9	1381.5	1376.1	1373.4
40°	1357.8	1354.9	1352.0	1349.2	1346.4	1342.2	1336.9	1331.4	1326.1	1320.7	1317.1
42.5°	1301.0	1299.3	1297.6	1295.9	1294.1	1290.3	1284.3	1278.4	1272.4	1266.5	1262.3
45°	1217.5	1215.0	1212.4	1209.9	1207.5	1203.4	1197.6	1191.8	1186.1	1180.4	1176.5
47.5°	1130.0	1128.3	1126.6	1124.9	1123.2	1119.7	1114.4	1109.1	1103.8	1098.5	1094.1
50°	1070.8	1069.3	1067.8	1066.4	1065.0	1061.8	1056.7	1051.8	1046.7	1041.7	1036.7
52.5°	1012.7	1011.0	1009.3	1007.5	1005.8	1002.3	997.0	991.7	986.4	981.1	976.6
55°	920.8	919.7	918.7	917.6	916.5	913.4	908.4	903.4	898.4	893.3	889.1
57.5°	833.0	831.8	830.6	829.4	828.2	825.1	820.1	815.2	810.2	805.3	801.2
60°	772.4	770.6	768.8	767.1	765.3	762.0	757.4	752.8	748.0	743.4	740.1
62.5°	713.1	711.6	710.0	708.5	707.1	703.9	698.9	694.0	689.0	684.1	681.2
65°	624.1	622.3	620.5	618.6	616.9	614.2	610.7	607.0	603.5	599.9	596.3
67.5°	534.4	532.8	531.1	529.5	527.9	525.2	521.8	518.4	514.9	511.5	508.1
70°	479.0	476.5	473.9	471.4	468.9	466.3	463.3	460.5	457.6	454.7	451.9
72.5°	419.6	417.1	414.5	412.0	409.6	407.2	404.9	402.5	400.3	398.0	395.7
75°	332.1	330.4	328.6	326.8	325.0	323.3	321.4	319.6	317.9	316.1	314.7
77.5°	248.6	247.8	247.1	246.3	245.5	244.3	242.8	241.2	239.6	238.0	237.6
80°	198.3	197.2	196.2	195.1	194.1	193.2	192.5	191.7	191.0	190.3	189.6
82.5°	149.4	148.9	148.3	147.8	147.3	147.0	146.8	146.7	146.5	146.4	146.0
85°	87.1	87.1	87.1	87.1	87.1	86.7	86.0	85.3	84.5	83.8	83.8
87.5°	33.6	33.4	33.4	33.2	32.9	32.7	32.8	32.5	32.4	32.2	32.2
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°	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5	2012.5
2.5°	2005.3	2008.2	2011.0	2012.4	2012.1	2011.8	2011.4	2011.1
5°	1994.6	1998.5	2002.5	2004.1	2003.4	2002.7	2002.0	2001.1
7.5°	1972.4	1975.5	1978.6	1980.0	1979.6	1979.1	1978.7	1978.3
10°	1953.7	1956.6	1959.4	1960.6	1959.8	1959.1	1958.3	1957.6
12.5°	1931.1	1934.2	1937.4	1938.4	1937.4	1936.4	1935.4	1934.4
15°	1887.7	1890.0	1892.1	1892.6	1891.6	1890.5	1889.4	1888.3
17.5°	1838.5	1839.9	1841.2	1841.5	1840.8	1840.1	1839.4	1838.7
20°	1801.8	1802.8	1803.9	1804.1	1803.4	1802.7	1802.0	1801.2
22.5°	1763.5	1765.4	1767.4	1767.7	1766.5	1765.1	1763.8	1762.5
25°	1700.4	1700.7	1701.1	1700.5	1699.1	1697.7	1696.3	1694.9
27.5°	1629.5	1628.7	1627.8	1626.5	1624.7	1623.0	1621.1	1619.3
30°	1580.6	1579.2	1577.8	1576.2	1574.4	1572.7	1570.8	1569.0
32.5°	1531.1	1529.3	1527.6	1525.9	1524.1	1522.3	1520.6	1518.7
35°	1452.8	1450.3	1447.7	1445.6	1443.8	1442.0	1440.2	1438.5
37.5°	1370.7	1368.0	1365.2	1362.7	1360.4	1358.0	1355.6	1353.2
40°	1313.5	1309.9	1306.4	1303.6	1301.9	1300.1	1298.3	1296.5
42.5°	1258.2	1254.1	1249.9	1247.2	1246.0	1244.8	1243.5	1242.3
45°	1172.6	1168.6	1164.7	1162.2	1161.0	1159.9	1158.9	1157.8
47.5°	1089.6	1085.2	1080.8	1077.1	1074.4	1071.7	1068.9	1066.2
50°	1031.7	1026.6	1021.7	1018.0	1015.9	1013.8	1011.6	1009.5
52.5°	972.2	967.8	963.3	959.8	957.0	954.3	951.6	948.9
55°	884.7	880.5	876.2	872.9	870.8	868.7	866.5	864.3
57.5°	797.2	793.0	789.0	785.9	783.9	781.7	779.6	777.6
60°	736.9	733.8	730.5	728.0	726.2	724.4	722.7	720.8
62.5°	678.1	675.2	672.3	669.9	668.1	666.3	664.6	662.8
65°	592.7	589.2	585.5	582.9	581.1	579.3	577.4	575.7
67.5°	504.6	501.2	497.8	495.7	495.2	494.7	494.2	493.7
70°	449.0	446.2	443.2	441.3	440.2	439.2	438.1	437.0
72.5°	393.4	391.1	388.8	387.1	386.1	385.0	383.8	382.8
75°	313.2	311.7	310.3	309.4	309.1	308.7	308.3	308.0
77.5°	237.1	236.7	236.3	235.6	234.7	233.8	232.8	231.9
80°	188.8	188.1	187.4	186.9	186.5	186.1	185.8	185.4
82.5°	145.5	145.1	144.7	144.3	143.9	143.6	143.2	142.9
85°	83.8	83.8	83.8	83.7	83.3	82.9	82.6	82.2
87.5°	32.2	32.3	32.4	32.4	32.4	32.5	32.4	32.4
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: P332678-840

CATALOG NUMBER: S124DIP-S1195D365U840-4F0-1E-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)