

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: P242632

Luminaire Tested: **S124DR-S1195D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242632
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-21)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DR-S1195D927-X4F0-XX-UDD-A-W
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3910.4 lumens
Efficiency: N/A
Efficacy: 95.1 lumens/watt
Spacing Criteria (0/90/45): 1.3 / 1.22 / 1.41
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

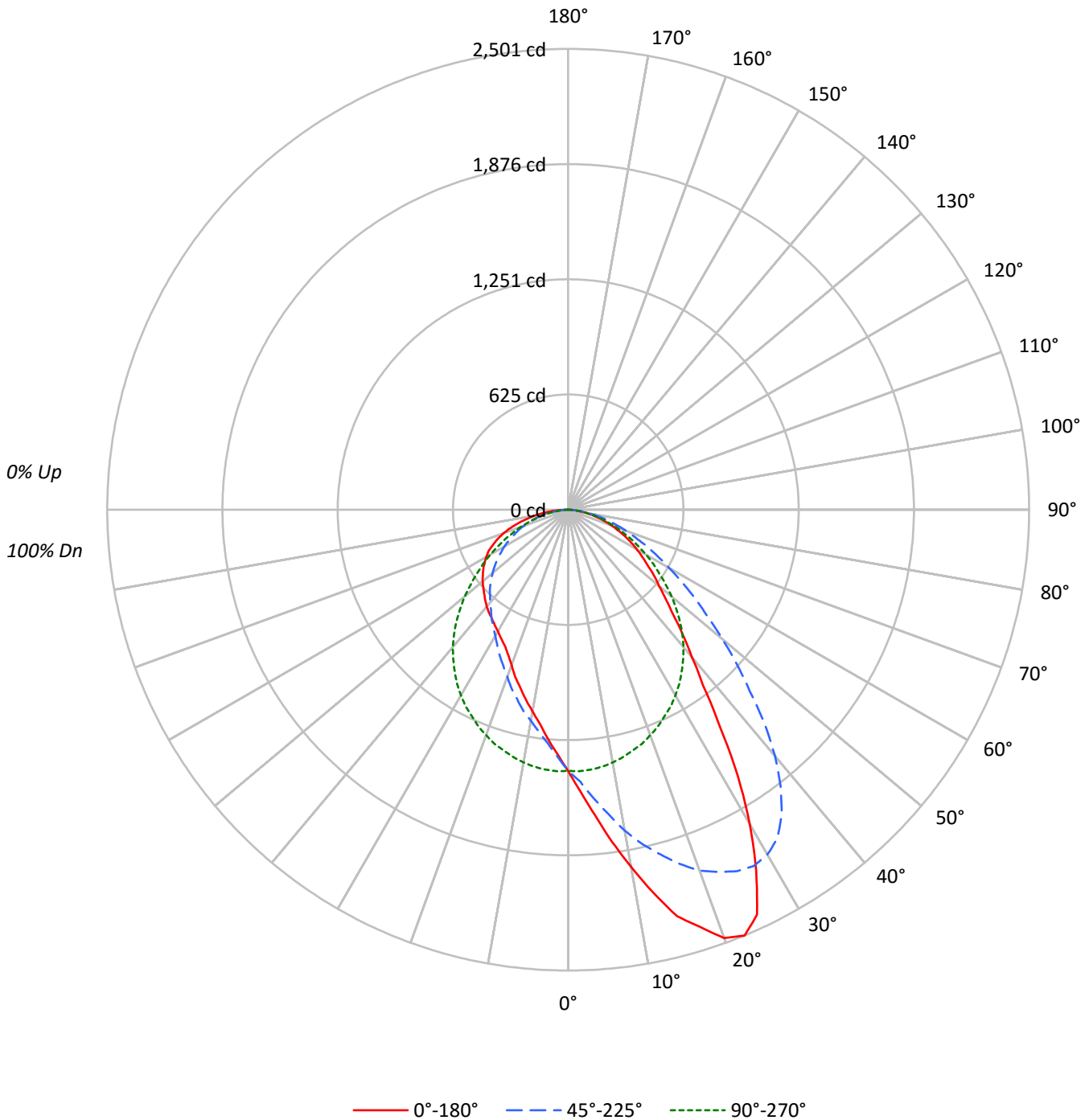
Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102	100
1	109	105	101	97	107	103	99	96	98	95	93		95	92	90		91	89	87	85
2	100	92	86	80	98	90	84	79	87	82	78		84	79	76		81	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66		74	69	65		72	67	64	62
4	84	73	64	58	82	72	64	58	69	62	57		67	61	56		65	60	55	53
5	78	65	57	50	76	64	56	50	62	55	50		60	54	49		58	53	49	46
6	72	59	51	44	70	58	50	44	56	49	44		55	48	43		53	47	43	41
7	67	54	45	39	65	53	45	39	52	44	39		50	44	39		49	43	38	36
8	62	49	41	35	61	49	41	35	47	40	35		46	40	35		45	39	35	33
9	58	45	37	32	57	45	37	32	44	37	32		43	36	32		42	36	31	30
10	55	42	34	29	54	41	34	29	40	34	29		39	33	29		39	33	29	27

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	12596	12596	12596
5°	14834	12629	11146
10°	17761	12573	10036
15°	21015	12446	9216
20°	23401	12317	8485
25°	23779	12125	7980
30°	20233	11942	7821
35°	15557	11645	7823
40°	12125	11294	7969
45°	10109	10767	8103
50°	8897	10123	8377
55°	8152	9353	8716
60°	7639	8661	9122
65°	7111	7889	9459
70°	6500	7124	9673
75°	5808	6271	9558
80°	4868	5139	9255
85°	3590	3712	8863



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	137.9	3.5
10°-20°	425.7	10.9
20°-30°	676.3	17.3
30°-40°	751.4	19.2
40°-50°	683.4	17.5
50°-60°	558.4	14.3
60°-70°	398.7	10.2
70°-80°	219.3	5.6
80°-90°	59.3	1.5
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1239.9	31.7
0°-40°	1991.3	50.9
0°-60°	3233.2	82.7
0°-90°	3910.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3910.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1417	1417	1417	1417	1417	
5°	1662	1570	1415	1272	1249	168
15°	2284	1938	1352	1066	1002	645
25°	2424	2164	1236	876	814	1075
35°	1434	2019	1073	724	721	907
45°	804	1394	856	600	645	632
55°	526	839	604	469	562	475
65°	338	467	375	326	450	335
75°	169	218	183	181	278	180
85°	35	45	36	52	87	43
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1
2.5°	1531.0	1530.4	1524.5	1523.4	1519.3	1514.0	1512.8	1503.4	1484.6	1475.8	1473.5
5°	1662.5	1674.2	1659.0	1656.0	1654.3	1634.9	1624.9	1613.2	1586.2	1570.3	1558.0
7.5°	1816.3	1816.9	1810.4	1804.0	1792.8	1776.4	1754.1	1728.2	1697.1	1665.4	1643.1
10°	1967.8	1972.5	1964.8	1963.7	1933.7	1914.9	1877.4	1845.7	1809.3	1768.8	1731.8
12.5°	2127.4	2118.0	2115.1	2084.0	2084.6	2046.4	2001.2	1968.3	1907.3	1859.2	1806.9
15°	2283.6	2270.7	2262.5	2227.8	2210.8	2163.2	2116.9	2081.1	2007.7	1937.8	1885.0
17.5°	2374.0	2389.8	2368.7	2354.6	2308.2	2277.1	2230.8	2157.4	2102.8	2015.9	1955.4
20°	2473.8	2475.0	2464.4	2449.7	2415.1	2372.8	2321.2	2239.0	2170.3	2084.0	1992.4
22.5°	2500.8	2500.8	2497.9	2484.4	2460.3	2428.0	2375.8	2310.6	2223.7	2128.0	2036.4
25°	2424.5	2422.1	2427.4	2442.7	2432.7	2422.1	2392.2	2341.1	2263.6	2164.4	2065.8
27.5°	2208.4	2223.7	2255.4	2293.0	2320.0	2344.1	2342.3	2320.6	2265.4	2179.7	2074.6
30°	1971.3	1991.2	2013.6	2051.1	2123.9	2165.6	2211.4	2246.0	2226.6	2161.5	2065.2
32.5°	1710.6	1711.8	1747.6	1791.7	1856.8	1946.6	2025.9	2105.1	2139.2	2112.8	2036.4
35°	1433.6	1441.8	1477.6	1519.9	1601.4	1699.5	1808.7	1906.1	1986.5	2018.8	1977.7
37.5°	1201.1	1226.9	1253.9	1302.1	1376.6	1465.3	1582.7	1704.2	1822.2	1893.8	1901.4
40°	1044.9	1059.6	1077.8	1112.4	1173.5	1260.4	1357.8	1502.2	1629.6	1744.7	1782.3
42.5°	921.7	928.7	938.1	968.6	1011.5	1097.8	1184.6	1307.3	1435.3	1578.6	1647.8
45°	804.2	813.1	831.8	850.0	885.3	945.1	1027.9	1132.4	1261.0	1393.6	1509.9
47.5°	716.2	722.1	733.8	753.8	785.5	826.0	896.4	985.1	1110.7	1239.2	1363.7
50°	643.4	648.1	656.9	674.5	697.4	732.6	787.8	869.4	962.7	1092.5	1214.0
52.5°	585.9	587.0	592.9	603.5	620.5	648.7	691.5	755.5	840.6	952.8	1073.7
55°	526.0	528.3	534.2	543.0	558.9	577.6	612.3	662.8	738.5	838.9	944.0
57.5°	476.7	479.0	483.7	487.2	501.3	517.2	545.4	581.8	641.0	730.3	826.0
60°	429.7	428.5	434.4	437.3	446.2	459.1	479.6	514.2	564.1	632.8	719.1
62.5°	383.9	382.2	386.9	391.0	395.1	405.6	421.5	446.7	484.9	545.4	617.0
65°	338.1	335.8	338.7	343.4	348.1	354.0	366.3	390.4	422.7	467.3	524.2
67.5°	291.2	294.1	294.1	297.0	300.0	308.2	317.0	335.8	358.7	395.1	445.6
70°	250.1	250.7	253.0	253.0	254.8	261.8	268.9	278.8	301.2	334.0	373.4
72.5°	209.0	211.9	210.2	212.5	213.7	217.8	222.5	231.9	250.1	272.4	304.1
75°	169.1	170.8	170.8	171.4	173.2	174.9	179.0	186.1	199.6	217.8	240.7
77.5°	130.3	130.3	131.5	133.8	133.8	136.8	140.3	145.6	153.2	166.7	181.4
80°	95.1	96.3	95.7	96.9	96.9	99.2	100.4	107.4	110.4	118.6	129.7
82.5°	63.4	64.6	64.6	66.3	67.5	67.5	69.3	71.0	74.0	81.0	83.9
85°	35.2	36.4	35.2	36.4	38.2	38.7	40.5	41.1	43.4	45.2	49.3
87.5°	12.9	14.7	14.7	15.3	16.4	17.0	17.6	17.0	19.4	20.0	22.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1
2.5°	1474.1	1465.8	1460.0	1455.3	1442.4	1434.7	1428.9	1420.6	1411.2	1401.3	1388.9
5°	1545.7	1525.7	1511.0	1488.7	1467.6	1450.0	1431.8	1415.4	1395.4	1373.7	1357.8
7.5°	1619.1	1591.5	1554.5	1525.7	1491.1	1461.1	1434.7	1407.1	1377.8	1349.6	1323.2
10°	1688.3	1650.2	1607.9	1558.0	1511.0	1469.4	1430.6	1393.0	1356.7	1320.3	1289.1
12.5°	1762.9	1713.0	1645.5	1585.0	1531.0	1471.7	1423.0	1374.9	1329.1	1290.3	1252.7
15°	1828.0	1759.4	1687.2	1609.1	1539.8	1474.6	1410.7	1352.5	1303.2	1252.7	1217.5
17.5°	1869.1	1784.0	1706.5	1624.9	1545.1	1463.5	1397.2	1332.0	1270.9	1221.6	1177.6
20°	1909.6	1825.1	1722.4	1640.8	1541.0	1456.4	1376.6	1302.1	1237.5	1184.1	1138.3
22.5°	1944.9	1843.9	1741.2	1627.3	1528.1	1437.1	1347.8	1272.7	1206.4	1149.4	1106.0
25°	1953.1	1841.0	1729.4	1622.6	1509.9	1403.6	1324.4	1236.3	1165.9	1106.6	1059.6
27.5°	1956.0	1837.4	1713.6	1597.3	1481.1	1384.2	1280.9	1204.0	1131.2	1068.4	1023.8
30°	1949.6	1824.5	1688.9	1560.4	1443.5	1336.1	1249.2	1163.5	1089.0	1026.7	979.8
32.5°	1929.0	1797.5	1657.2	1519.3	1397.2	1292.7	1202.3	1121.8	1049.6	988.6	938.7
35°	1885.6	1757.0	1608.5	1467.0	1343.2	1236.9	1155.9	1073.1	1000.3	942.2	894.7
37.5°	1827.5	1707.7	1556.8	1409.5	1290.3	1182.3	1100.7	1024.4	958.6	898.8	849.4
40°	1746.4	1644.3	1492.8	1350.2	1218.7	1117.1	1042.0	973.3	908.2	852.4	806.0
42.5°	1653.1	1567.4	1430.6	1277.4	1151.8	1049.6	976.8	917.0	856.5	806.0	759.6
45°	1538.6	1479.9	1348.4	1208.7	1076.6	980.4	910.5	856.5	804.8	754.3	715.6
47.5°	1411.2	1378.4	1263.9	1130.1	1003.3	907.0	846.5	794.9	747.9	703.9	669.2
50°	1282.7	1268.6	1172.9	1044.9	925.2	835.9	774.9	732.0	693.3	655.7	623.4
52.5°	1155.9	1158.8	1074.9	960.4	851.8	766.7	706.2	666.9	634.6	605.8	577.6
55°	1026.1	1042.6	975.1	870.6	771.4	693.9	639.3	603.5	580.0	554.8	533.0
57.5°	907.0	934.6	875.9	780.2	696.2	622.3	574.1	546.5	520.7	504.3	487.2
60°	790.7	816.6	773.1	695.6	617.6	556.5	511.3	487.2	465.5	455.0	443.8
62.5°	687.4	709.7	680.4	609.9	544.8	486.7	450.3	427.4	414.5	402.7	396.3
65°	590.0	609.3	581.8	529.5	471.4	424.4	393.3	375.1	361.0	356.3	348.1
67.5°	493.7	511.3	496.6	450.8	401.5	364.6	339.9	320.5	312.3	307.6	302.3
70°	409.8	427.4	411.5	372.8	337.0	307.0	284.1	274.1	265.3	263.6	255.4
72.5°	338.7	349.3	333.4	305.3	275.9	251.8	235.4	224.8	221.3	217.8	214.3
75°	264.8	275.3	264.8	241.3	219.6	201.9	186.7	182.6	177.3	175.5	172.6
77.5°	198.4	208.4	200.2	184.3	167.3	152.6	143.8	138.0	137.4	133.8	135.0
80°	143.2	149.1	141.5	131.5	118.6	109.2	103.3	100.4	96.9	95.7	98.0
82.5°	92.8	94.5	91.6	85.7	76.9	71.6	68.1	64.6	64.6	65.2	64.6
85°	53.4	52.8	52.2	46.4	43.4	39.3	37.0	36.4	35.8	37.0	38.2
87.5°	22.3	22.9	22.3	20.0	18.2	16.4	15.9	15.3	15.9	16.4	17.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1	1417.1
2.5°	1383.1	1377.8	1370.2	1359.6	1350.8	1341.4	1339.0	1335.5	1342.6	1336.7	1334.9
5°	1344.3	1332.0	1316.1	1297.9	1287.4	1272.1	1269.2	1263.3	1257.4	1256.9	1251.0
7.5°	1303.8	1286.8	1266.8	1248.0	1231.6	1215.2	1204.6	1203.4	1194.0	1189.3	1183.5
10°	1265.1	1242.8	1218.7	1201.1	1181.1	1163.5	1151.2	1144.1	1138.3	1131.8	1125.9
12.5°	1219.3	1195.2	1176.4	1157.1	1132.4	1120.1	1097.8	1084.3	1084.3	1086.0	1068.4
15°	1185.8	1162.3	1131.8	1104.8	1091.9	1066.1	1054.9	1040.8	1032.0	1023.2	1016.2
17.5°	1144.7	1116.0	1092.5	1062.0	1037.9	1018.5	1003.3	995.6	981.5	968.6	959.8
20°	1106.6	1075.5	1050.2	1017.3	990.3	965.1	952.8	941.0	931.0	920.5	910.5
22.5°	1067.8	1035.0	1002.7	971.0	946.3	919.3	907.6	890.5	881.1	876.5	866.5
25°	1026.7	991.5	956.3	925.8	899.9	876.5	860.6	848.3	837.7	833.0	826.6
27.5°	982.1	947.5	914.0	878.8	848.9	831.8	818.9	808.9	802.5	795.4	792.5
30°	939.9	903.5	867.1	834.8	807.8	790.7	779.0	772.5	767.9	764.9	762.0
32.5°	897.0	861.2	822.4	793.7	770.2	755.5	747.3	740.8	739.1	738.5	737.9
35°	850.6	814.2	779.0	752.6	729.7	723.8	716.2	712.7	711.5	715.6	717.4
37.5°	806.0	772.0	739.1	712.7	697.4	688.0	685.1	684.5	688.6	692.1	696.2
40°	763.2	730.3	699.8	677.4	663.4	658.1	656.9	659.8	664.5	668.6	673.3
42.5°	721.5	689.2	662.2	641.6	632.8	628.1	629.3	632.2	639.3	644.6	652.2
45°	678.0	651.0	624.0	607.0	598.8	600.0	600.0	605.2	611.7	619.3	627.0
47.5°	637.5	609.9	587.0	572.4	568.3	566.5	569.4	576.5	585.3	594.1	604.7
50°	596.4	570.6	551.2	538.3	533.6	535.4	540.1	546.5	557.7	569.4	580.6
52.5°	554.8	531.9	514.2	502.5	499.6	503.1	507.8	518.9	528.3	541.3	555.3
55°	511.3	491.4	477.3	468.5	467.3	469.0	474.3	485.5	499.6	515.4	528.3
57.5°	468.5	451.4	437.9	431.5	432.1	433.2	441.5	455.0	469.0	486.1	502.5
60°	425.0	409.8	399.2	394.5	395.1	398.6	409.2	421.5	440.3	456.7	474.3
62.5°	383.9	371.0	361.0	356.9	355.7	364.6	374.5	387.4	406.2	425.0	444.4
65°	339.3	328.7	320.5	318.2	319.9	325.8	338.7	355.7	371.6	391.0	410.9
67.5°	295.9	287.1	281.2	282.4	284.1	292.3	303.5	318.2	335.8	355.7	376.3
70°	254.8	246.6	241.9	242.4	246.0	256.5	265.9	280.6	300.0	320.5	337.0
72.5°	212.5	207.8	203.7	206.6	210.2	216.6	228.9	243.6	260.1	278.8	296.5
75°	169.7	169.7	167.3	169.1	174.4	181.4	190.2	205.5	222.5	237.8	251.8
77.5°	133.3	131.5	132.7	134.4	138.0	146.8	156.7	167.9	181.4	197.2	209.0
80°	96.3	96.9	99.8	103.3	104.5	111.0	121.5	131.5	141.5	154.4	165.5
82.5°	66.3	66.9	68.1	72.8	74.0	81.0	86.9	96.9	105.7	113.3	122.1
85°	39.3	39.3	42.3	44.0	47.0	51.7	55.8	61.6	69.9	75.7	84.5
87.5°	18.8	18.8	21.1	22.3	24.1	27.0	28.2	34.6	37.0	39.9	45.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P242632

CATALOG NUMBER: S124DR-S1195D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1417.1	1417.1	1417.1	1417.1
2.5°	1333.8	1332.6	1328.5	1327.9
5°	1247.5	1244.5	1242.8	1249.2
7.5°	1182.3	1180.0	1174.7	1172.9
10°	1120.1	1117.7	1113.0	1111.9
12.5°	1060.2	1054.9	1054.9	1056.7
15°	1008.5	1006.2	999.7	1001.5
17.5°	955.7	953.4	944.5	953.4
20°	906.4	901.7	897.6	897.0
22.5°	859.4	855.3	855.9	851.2
25°	821.9	817.7	816.6	813.6
27.5°	791.3	789.0	786.6	787.8
30°	763.7	763.2	762.0	762.0
32.5°	740.8	740.8	742.0	742.0
35°	719.7	721.5	722.6	720.9
37.5°	700.9	702.1	703.9	705.6
40°	678.6	682.7	683.9	686.8
42.5°	657.5	662.2	665.7	665.7
45°	635.8	640.5	644.6	644.6
47.5°	613.5	619.9	624.0	624.6
50°	590.6	598.8	602.9	605.8
52.5°	568.3	576.5	582.3	583.5
55°	541.8	553.6	560.0	562.4
57.5°	518.4	528.9	536.0	537.7
60°	490.2	501.9	511.3	513.1
62.5°	461.4	473.7	482.0	487.2
65°	427.4	439.7	447.9	449.7
67.5°	391.6	404.5	409.8	413.3
70°	353.4	363.4	369.2	372.2
72.5°	310.0	320.5	327.6	327.6
75°	265.3	274.7	278.3	278.3
77.5°	219.0	224.2	228.9	230.1
80°	174.4	177.3	180.8	180.8
82.5°	128.6	130.9	134.4	133.8
85°	83.4	88.6	88.1	86.9
87.5°	47.0	47.6	49.3	50.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)