

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: P332687-940

Luminaire Tested: **S124DIP-S1195D590U940-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332687-940
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-S1195D590U940-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6444.6 lumens
Efficiency: N/A
Efficacy: 117.0 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

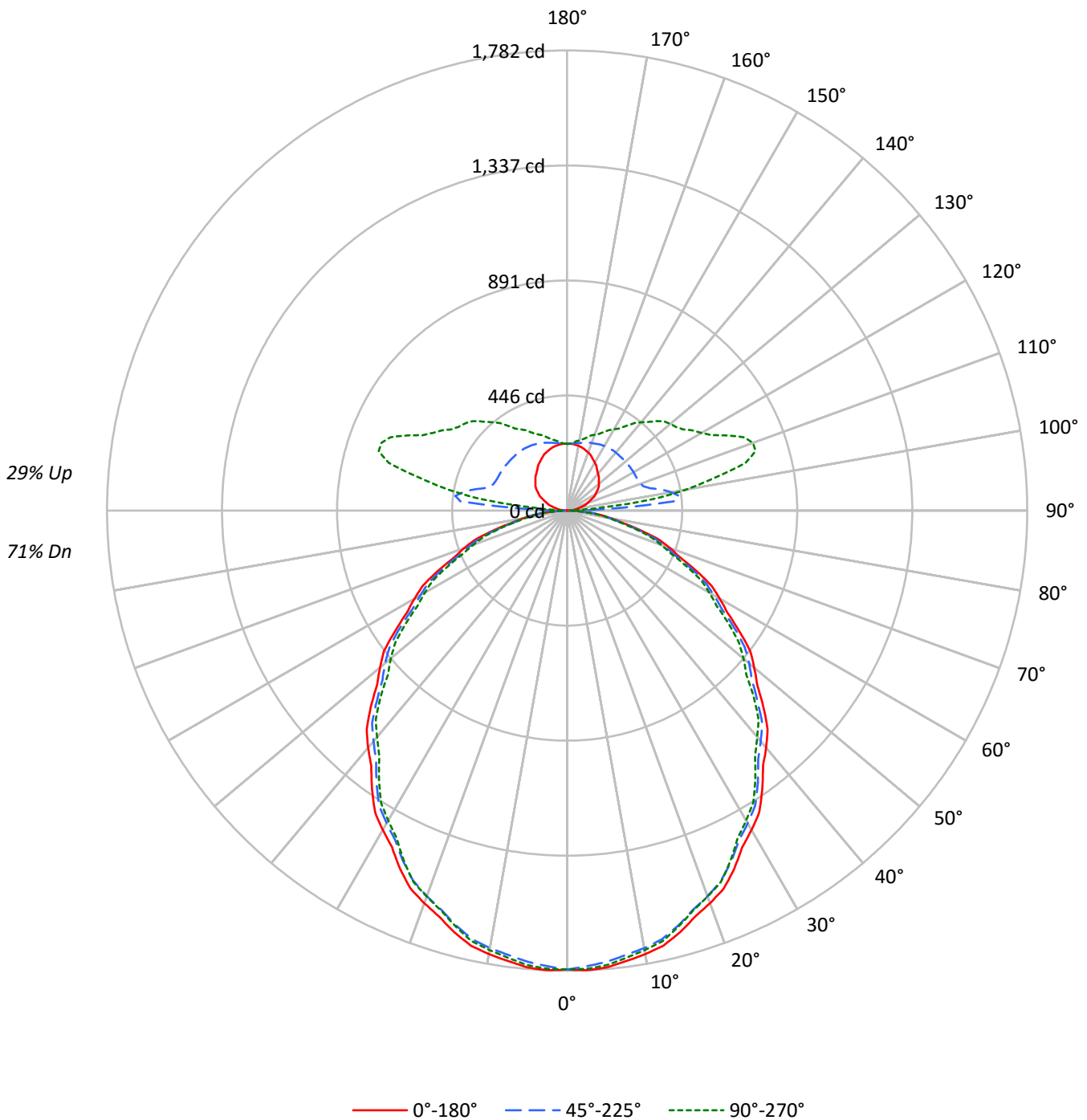
Input Watts (W): 55.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	106	106	106	106	95	95	95	85	85	85	75	75	75	71
1	102	98	94	90	97	93	89	86	83	81	78	75	72	71	66	65	63	60
2	93	86	79	74	88	81	75	71	73	68	65	65	62	59	58	56	53	50
3	85	75	68	61	80	71	65	59	64	59	54	58	54	50	52	48	45	42
4	78	67	58	52	73	63	56	50	57	51	46	52	47	43	46	42	39	36
5	72	60	51	45	68	57	49	43	51	45	40	46	41	37	42	38	34	31
6	66	54	45	39	62	51	43	38	46	40	35	42	37	33	38	34	30	28
7	61	48	40	34	58	46	39	33	42	36	31	38	33	29	35	30	27	24
8	57	44	36	31	54	42	35	30	39	32	28	35	30	26	32	27	24	22
9	53	40	33	27	50	39	32	27	35	29	25	32	27	23	29	25	22	20
10	50	37	30	25	47	36	29	24	33	27	23	30	25	21	27	23	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14346	14346	14346
5°	14389	14216	14319
10°	14299	14100	14170
15°	14125	13900	13936
20°	13897	13651	13664
25°	13635	13367	13331
30°	13313	13035	12915
35°	12980	12686	12518
40°	12635	12290	12064
45°	12273	11900	11671
50°	11875	11552	11195
55°	11444	11102	10742
60°	11013	10598	10277
65°	10527	10118	9712
70°	9982	9477	9106
75°	9148	8706	8484
80°	8140	7810	7610
85°	7123	6854	6725



TEST NUMBER: P332687-940

CATALOG NUMBER: S124DIP-S1195D590U940-4F0-1E-UDD-F4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	167.3	2.6
10°-20°	471.5	7.3
20°-30°	694.0	10.8
30°-40°	806.8	12.5
40°-50°	806.8	12.5
50°-60°	705.8	11.0
60°-70°	524.1	8.1
70°-80°	297.8	4.6
80°-90°	87.4	1.4
90°-100°	187.0	2.9
100°-110°	389.2	6.0
110°-120°	348.6	5.4
120°-130°	293.2	4.6
130°-140°	244.5	3.8
140°-150°	186.8	2.9
150°-160°	131.3	2.0
160°-170°	77.2	1.2
170°-180°	25.1	0.4
0°-30°	1332.9	20.7
0°-40°	2139.7	33.2
0°-60°	3652.3	56.7
0°-90°	4561.5	70.8
90°-120°	924.8	14.4
90°-150°	1649.4	25.6
90°-180°	1883.0	29.2
0°-180°	6444.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1777	1777	1777	1777	1777	
5°	1776	1769	1754	1769	1767	168
15°	1690	1684	1663	1671	1667	476
25°	1531	1520	1501	1502	1497	704
35°	1317	1307	1287	1277	1270	823
45°	1075	1064	1042	1027	1022	828
55°	813	808	789	772	763	728
65°	551	544	530	516	508	545
75°	293	286	279	274	272	312
85°	77	77	74	74	73	85
90°	0	4	9	10	11	5
95°	17	53	415	205	124	19
105°	60	86	334	719	716	63
115°	105	132	298	572	687	104
125°	146	173	296	486	548	130
135°	173	206	294	432	490	134
145°	200	229	292	364	400	125
155°	227	245	284	321	335	105
165°	248	255	272	288	292	70
175°	258	259	261	264	264	25
180°	259	259	259	259	259	



TEST NUMBER: P332687-940

CATALOG NUMBER: S124DIP-S1195D590U940-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0
2.5°	1781.5	1780.8	1780.0	1779.3	1778.5	1776.7	1774.0	1771.2	1768.4	1765.7	1768.2
5°	1775.6	1774.3	1773.1	1771.8	1770.6	1768.2	1764.7	1761.2	1757.7	1754.3	1757.7
7.5°	1759.1	1757.8	1756.6	1755.2	1754.0	1751.5	1747.6	1743.7	1739.9	1736.0	1738.8
10°	1744.3	1743.0	1741.8	1740.4	1739.2	1736.5	1732.4	1728.3	1724.2	1720.1	1722.6
12.5°	1724.9	1723.7	1722.3	1721.1	1719.8	1717.0	1712.7	1708.3	1704.0	1699.6	1702.4
15°	1690.1	1688.9	1687.7	1686.4	1685.1	1682.1	1677.3	1672.6	1667.9	1663.1	1665.0
17.5°	1648.3	1646.7	1645.1	1643.6	1642.0	1639.0	1634.4	1630.0	1625.5	1621.0	1622.2
20°	1617.6	1616.0	1614.4	1612.8	1611.2	1608.0	1603.3	1598.6	1593.8	1589.0	1590.0
22.5°	1584.5	1582.4	1580.4	1578.2	1576.2	1572.7	1568.0	1563.3	1558.5	1553.7	1555.5
25°	1530.7	1528.5	1526.3	1524.0	1521.8	1518.5	1514.0	1509.7	1505.2	1500.7	1501.1
27.5°	1469.2	1466.9	1464.6	1462.3	1460.1	1456.9	1452.8	1448.7	1444.6	1440.4	1439.7
30°	1428.2	1425.7	1423.1	1420.6	1418.1	1414.7	1410.6	1406.5	1402.4	1398.3	1397.0
32.5°	1384.9	1382.6	1380.4	1378.0	1375.7	1372.4	1368.1	1363.7	1359.3	1355.0	1353.4
35°	1317.1	1314.9	1312.7	1310.5	1308.2	1304.9	1300.5	1296.1	1291.6	1287.2	1285.0
37.5°	1245.6	1243.6	1241.6	1239.6	1237.5	1234.1	1229.4	1224.7	1219.9	1215.1	1212.7
40°	1198.9	1196.4	1193.8	1191.3	1188.8	1185.2	1180.4	1175.6	1170.9	1166.2	1163.0
42.5°	1148.8	1147.3	1145.8	1144.2	1142.7	1139.3	1134.1	1128.8	1123.6	1118.3	1114.6
45°	1075.0	1072.8	1070.6	1068.4	1066.2	1062.6	1057.5	1052.4	1047.3	1042.3	1038.8
47.5°	997.8	996.3	994.8	993.3	991.8	988.7	984.0	979.4	974.6	970.0	966.1
50°	945.5	944.2	942.9	941.6	940.4	937.5	933.1	928.7	924.3	919.8	915.4
52.5°	894.2	892.7	891.2	889.7	888.1	885.0	880.4	875.7	871.0	866.3	862.4
55°	813.1	812.1	811.2	810.2	809.2	806.6	802.1	797.7	793.3	788.8	785.1
57.5°	735.6	734.5	733.4	732.4	731.3	728.5	724.2	719.8	715.4	711.1	707.5
60°	682.1	680.5	678.9	677.3	675.7	672.9	668.8	664.7	660.5	656.4	653.5
62.5°	629.6	628.3	627.0	625.6	624.4	621.5	617.2	612.8	608.4	604.0	601.5
65°	551.1	549.5	547.9	546.3	544.7	542.3	539.2	536.0	532.9	529.7	526.6
67.5°	471.9	470.5	469.0	467.5	466.1	463.8	460.7	457.7	454.7	451.7	448.6
70°	422.9	420.7	418.5	416.3	414.0	411.7	409.1	406.6	404.0	401.5	399.0
72.5°	370.5	368.3	366.0	363.8	361.7	359.5	357.5	355.4	353.5	351.4	349.4
75°	293.3	291.8	290.2	288.6	287.0	285.4	283.8	282.2	280.7	279.1	277.9
77.5°	219.5	218.8	218.2	217.5	216.8	215.7	214.4	212.9	211.6	210.2	209.8
80°	175.1	174.2	173.3	172.3	171.4	170.6	170.0	169.2	168.6	168.0	167.4
82.5°	131.9	131.4	131.0	130.5	130.1	129.8	129.7	129.6	129.4	129.3	128.9
85°	76.9	76.9	76.9	76.9	76.9	76.6	76.0	75.3	74.6	74.0	74.0
87.5°	29.7	29.7	29.7	29.6	29.4	29.2	29.5	29.2	29.2	29.2	29.1
90°	0.5	1.5	3.0	3.6	4.1	4.1	7.1	7.1	8.1	9.2	8.6
92.5°	5.8	8.5	13.2	19.4	26.8	37.5	63.3	102.7	141.2	161.3	134.4
95°	16.8	18.3	23.4	30.1	42.2	63.6	107.8	191.3	312.8	414.6	426.2
97.5°	30.1	30.1	34.5	40.6	51.1	69.0	103.1	171.9	292.8	436.7	535.6
100°	38.7	38.7	42.2	48.3	58.0	74.3	104.2	161.8	265.6	408.9	539.2
102.5°	46.8	47.6	50.7	56.4	65.7	81.1	108.3	158.9	247.2	374.4	508.6
105°	59.5	61.1	63.6	69.7	78.8	93.6	118.0	160.2	231.5	333.7	453.3
107.5°	73.6	74.5	77.1	83.6	92.4	106.9	129.3	167.7	228.6	310.9	408.5
110°	82.9	83.9	86.5	92.6	101.7	115.5	137.9	173.4	229.4	303.2	386.1



TEST NUMBER: P332687-940

CATALOG NUMBER: S124DIP-S1195D590U940-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	91.8	92.9	95.9	101.6	110.7	124.4	146.0	179.6	231.8	299.5	373.4
115°	104.8	106.3	109.9	114.9	124.7	138.4	158.7	189.2	236.6	297.6	361.7
117.5°	118.2	119.7	122.8	128.4	137.4	151.7	171.0	199.1	241.5	297.0	356.4
120°	127.2	128.2	131.7	137.3	146.0	160.2	179.6	206.0	245.2	297.0	353.6
122.5°	135.3	136.3	139.9	145.1	154.5	168.4	187.7	212.5	248.9	296.7	350.3
125°	146.0	148.0	151.1	156.7	166.3	180.6	198.9	222.3	254.3	296.0	344.9
127.5°	155.4	157.1	160.8	167.1	177.2	191.5	209.3	230.8	258.7	294.9	337.7
130°	160.8	162.7	166.8	174.5	184.1	198.9	216.2	236.0	262.0	294.5	333.1
132.5°	166.0	167.6	173.0	180.2	190.6	204.6	221.9	241.3	264.8	294.1	329.1
135°	173.4	175.5	180.6	189.2	199.9	213.1	229.9	248.3	269.1	293.5	323.0
137.5°	180.9	182.8	188.4	196.6	207.8	220.3	236.0	253.2	271.6	293.4	317.7
140°	186.2	187.7	193.3	202.0	212.6	224.8	240.1	256.4	273.7	293.0	314.9
142.5°	191.9	193.4	198.6	206.8	217.1	228.9	243.8	258.8	275.3	293.0	312.5
145°	199.9	201.4	206.5	213.7	223.3	234.5	247.7	261.4	276.3	291.9	308.3
147.5°	208.9	209.5	213.9	221.2	229.3	239.4	251.8	263.8	276.7	290.2	304.5
150°	214.6	215.2	219.3	225.3	233.0	242.6	253.9	265.0	276.7	288.9	301.7
152.5°	220.0	220.1	224.1	229.8	236.7	245.5	255.5	265.8	275.9	286.9	298.4
155°	227.4	227.9	231.0	236.0	241.7	249.2	257.9	266.5	274.6	283.8	293.5
157.5°	234.6	234.6	237.5	241.4	246.3	252.3	259.7	266.5	273.4	280.7	288.6
160°	239.1	239.1	241.1	244.7	248.7	254.3	260.5	266.5	272.2	278.2	284.9
162.5°	243.2	242.7	244.3	247.5	251.2	255.6	261.3	266.5	270.9	275.8	281.6
165°	247.7	247.7	248.7	251.3	253.9	256.9	261.4	265.6	268.6	272.2	276.3
167.5°	252.3	251.8	252.3	254.2	255.7	258.0	261.4	264.3	266.2	268.5	271.3
170°	254.3	253.9	254.3	255.8	256.9	258.4	260.9	263.5	264.5	266.0	268.0
172.5°	256.4	255.8	255.9	257.1	257.7	258.8	260.6	262.7	262.9	263.6	265.2
175°	258.4	257.9	257.9	258.4	259.0	259.0	259.9	261.4	260.9	260.9	262.0
177.5°	259.3	259.0	258.5	259.0	259.0	259.0	259.3	260.1	259.3	259.3	259.8
180°	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0



TEST NUMBER: P332687-940

CATALOG NUMBER: S124DIP-S1195D590U940-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0
2.5°	1770.7	1773.3	1775.8	1776.9	1776.6	1776.4	1776.1	1775.8
5°	1761.2	1764.7	1768.2	1769.6	1769.0	1768.4	1767.7	1767.0
7.5°	1741.6	1744.4	1747.1	1748.4	1748.0	1747.6	1747.2	1746.9
10°	1725.1	1727.7	1730.2	1731.2	1730.5	1729.9	1729.2	1728.6
12.5°	1705.1	1707.9	1710.7	1711.6	1710.7	1709.9	1709.0	1708.1
15°	1666.9	1668.8	1670.7	1671.2	1670.3	1669.3	1668.3	1667.4
17.5°	1623.4	1624.6	1625.8	1626.0	1625.4	1624.8	1624.2	1623.5
20°	1591.0	1591.9	1592.9	1593.0	1592.4	1591.8	1591.2	1590.5
22.5°	1557.2	1558.9	1560.6	1560.9	1559.8	1558.6	1557.5	1556.3
25°	1501.5	1501.7	1502.1	1501.6	1500.3	1499.1	1497.8	1496.6
27.5°	1438.9	1438.2	1437.3	1436.2	1434.6	1433.1	1431.5	1429.9
30°	1395.7	1394.5	1393.2	1391.8	1390.2	1388.7	1387.1	1385.5
32.5°	1351.9	1350.4	1348.9	1347.4	1345.8	1344.2	1342.6	1341.0
35°	1282.8	1280.6	1278.4	1276.5	1274.9	1273.3	1271.7	1270.2
37.5°	1210.3	1207.9	1205.5	1203.3	1201.2	1199.1	1197.0	1194.9
40°	1159.8	1156.6	1153.5	1151.1	1149.6	1148.0	1146.4	1144.8
42.5°	1111.0	1107.3	1103.7	1101.3	1100.2	1099.1	1098.1	1097.0
45°	1035.4	1031.9	1028.4	1026.2	1025.2	1024.2	1023.3	1022.3
47.5°	962.2	958.2	954.3	951.1	948.7	946.3	943.9	941.5
50°	911.0	906.5	902.1	898.9	897.1	895.2	893.2	891.4
52.5°	858.4	854.5	850.6	847.5	845.1	842.7	840.3	837.9
55°	781.2	777.5	773.6	770.8	768.9	767.0	765.1	763.2
57.5°	703.9	700.3	696.7	693.9	692.1	690.3	688.4	686.6
60°	650.7	647.9	645.1	642.8	641.2	639.6	638.1	636.5
62.5°	598.8	596.2	593.6	591.6	590.0	588.4	586.8	585.2
65°	523.3	520.2	517.0	514.7	513.1	511.5	509.9	508.4
67.5°	445.6	442.6	439.5	437.7	437.3	436.8	436.4	436.0
70°	396.5	394.0	391.4	389.7	388.7	387.8	386.8	385.8
72.5°	347.4	345.4	343.3	341.8	340.9	339.9	338.9	338.0
75°	276.5	275.3	274.0	273.2	273.0	272.6	272.2	272.0
77.5°	209.4	209.0	208.7	208.0	207.2	206.4	205.5	204.7
80°	166.7	166.1	165.5	165.1	164.7	164.3	164.1	163.7
82.5°	128.5	128.1	127.8	127.4	127.1	126.8	126.4	126.2
85°	74.0	74.0	74.0	73.9	73.6	73.2	72.9	72.6
87.5°	29.2	29.2	29.3	29.3	29.5	29.6	29.5	29.5
90°	9.2	9.6	10.2	10.2	10.7	11.1	10.7	10.7
92.5°	99.9	75.2	59.8	49.7	43.6	40.9	39.1	39.1
95°	376.9	298.1	229.9	180.6	155.7	139.9	130.7	124.1
97.5°	556.9	527.6	477.9	424.7	388.3	357.6	342.3	331.7
100°	613.5	623.7	598.7	561.1	516.8	485.8	470.6	466.5
102.5°	610.6	661.1	668.3	652.6	625.4	603.0	586.9	583.6
105°	569.7	657.7	708.1	729.0	730.0	725.9	718.7	715.7
107.5°	511.7	605.3	676.3	721.6	746.7	758.3	763.4	764.7
110°	476.6	564.6	638.4	694.4	730.5	751.8	761.0	765.5



TEST NUMBER: P332687-940

CATALOG NUMBER: S124DIP-S1195D590U940-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	451.0	528.8	598.5	654.4	695.4	721.3	734.1	741.5
115°	425.3	487.9	547.3	596.2	636.3	666.9	683.1	687.2
117.5°	412.6	464.4	511.2	552.6	586.9	612.5	629.0	632.2
120°	407.0	454.2	494.9	531.0	560.1	582.5	595.7	601.3
122.5°	402.1	447.7	484.7	516.4	540.9	560.1	571.2	576.8
125°	393.7	437.5	472.5	500.5	520.8	535.7	545.3	548.3
127.5°	383.5	425.3	460.4	486.9	507.4	520.5	528.6	531.6
130°	375.4	415.6	450.1	477.2	498.0	510.7	518.9	521.9
132.5°	366.8	404.6	438.4	465.3	485.8	500.2	507.8	511.0
135°	355.1	388.2	419.1	444.6	464.9	479.2	487.3	490.4
137.5°	344.4	372.4	398.5	421.5	440.5	454.6	461.3	464.9
140°	338.2	362.2	385.0	406.4	424.3	435.4	442.6	446.7
142.5°	332.6	353.7	373.3	391.8	407.5	417.9	424.3	427.0
145°	324.5	341.8	357.1	371.3	384.1	392.7	397.8	400.3
147.5°	317.9	331.6	343.8	355.1	364.4	371.8	375.7	376.7
150°	313.9	325.6	335.7	344.9	353.0	359.6	362.7	363.2
152.5°	309.3	319.4	328.8	336.4	343.2	348.7	350.4	351.0
155°	302.6	310.8	318.4	324.5	329.7	333.7	335.2	335.2
157.5°	295.4	302.3	308.6	313.5	317.4	320.5	321.4	321.4
160°	291.0	296.6	302.1	306.2	309.2	312.4	312.8	312.8
162.5°	286.5	291.2	295.6	299.3	301.6	304.6	305.1	304.7
165°	280.3	283.3	286.9	289.4	291.5	293.5	293.0	292.5
167.5°	274.3	276.6	279.5	281.0	282.0	283.3	283.2	282.9
170°	270.6	272.2	274.2	275.7	276.7	277.2	276.7	276.7
172.5°	267.3	268.5	269.7	270.8	271.4	272.0	271.4	270.6
175°	263.0	263.5	264.5	264.5	264.5	265.6	264.5	263.5
177.5°	260.1	260.6	260.6	260.9	260.6	260.9	260.1	259.3
180°	259.0	259.0	259.0	259.0	259.0	259.0	259.0	259.0

(END OF REPORT)