

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: P332687-930

Luminaire Tested: **S124DIP-S1195D590U930-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332687-930
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-S1195D590U930-4F0-1E-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: 5892.4 lumens
Efficiency: N/A
Efficacy: 106.9 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

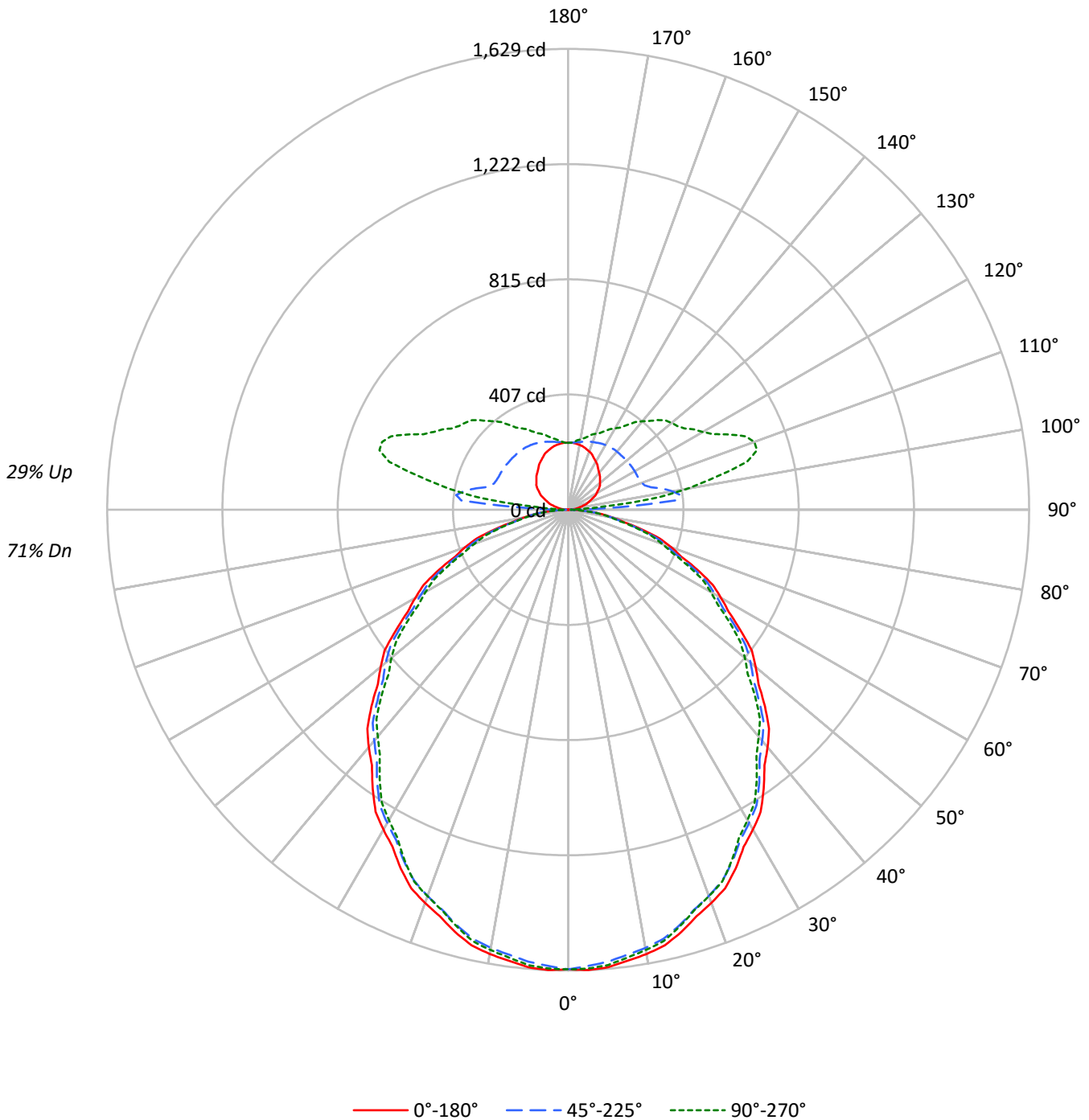
Input Watts (W): 55.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332687-930

CATALOG NUMBER: S124DIP-S1195D590U930-4F0-1E-UDD-F4

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°	13116	13116	13116
5°	13156	12998	13092
10°	13073	12892	12956
15°	12915	12709	12741
20°	12706	12482	12493
25°	12466	12222	12188
30°	12172	11918	11808
35°	11869	11599	11445
40°	11552	11236	11031
45°	11222	10880	10671
50°	10857	10562	10236
55°	10463	10151	9821
60°	10069	9689	9397
65°	9626	9251	8879
70°	9128	8665	8327
75°	8366	7960	7757
80°	7443	7141	6960
85°	6512	6271	6150



TEST NUMBER: P332687-930

CATALOG NUMBER: S124DIP-S1195D590U930-4F0-1E-UDD-F4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.0	2.6
10°-20°	431.1	7.3
20°-30°	634.5	10.8
30°-40°	737.7	12.5
40°-50°	737.7	12.5
50°-60°	645.3	11.0
60°-70°	479.2	8.1
70°-80°	272.3	4.6
80°-90°	79.9	1.4
90°-100°	171.0	2.9
100°-110°	355.9	6.0
110°-120°	318.7	5.4
120°-130°	268.1	4.6
130°-140°	223.6	3.8
140°-150°	170.8	2.9
150°-160°	120.0	2.0
160°-170°	70.6	1.2
170°-180°	23.0	0.4
0°-30°	1218.6	20.7
0°-40°	1956.3	33.2
0°-60°	3339.3	56.7
0°-90°	4170.7	70.8
90°-120°	845.6	14.4
90°-150°	1508.1	25.6
90°-180°	1722.0	29.2
0°-180°	5892.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1625	1625	1625	1625	1625	
5°	1623	1618	1604	1617	1616	154
15°	1545	1539	1521	1528	1524	435
25°	1400	1390	1372	1373	1368	644
35°	1204	1195	1177	1168	1161	753
45°	983	973	953	939	935	757
55°	743	739	721	706	698	666
65°	504	497	484	472	465	499
75°	268	262	255	250	249	285
85°	70	70	68	68	66	77
90°	0	4	8	9	10	5
95°	15	48	379	188	114	17
105°	54	79	305	657	654	58
115°	96	120	272	523	628	95
125°	134	159	271	445	501	119
135°	159	189	268	395	448	123
145°	183	209	267	333	366	115
155°	208	224	260	294	306	96
165°	226	234	249	263	267	64
175°	236	237	239	242	241	22
180°	237	237	237	237	237	



TEST NUMBER: P332687-930

CATALOG NUMBER: S124DIP-S1195D590U930-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7
2.5°	1628.9	1628.2	1627.5	1626.8	1626.1	1624.5	1622.0	1619.4	1616.9	1614.4	1616.7
5°	1623.4	1622.3	1621.1	1620.0	1618.9	1616.7	1613.5	1610.3	1607.1	1603.9	1607.1
7.5°	1608.3	1607.2	1606.1	1604.8	1603.7	1601.4	1597.8	1594.3	1590.8	1587.2	1589.8
10°	1594.8	1593.7	1592.5	1591.3	1590.2	1587.7	1584.0	1580.2	1576.5	1572.7	1575.0
12.5°	1577.1	1576.0	1574.8	1573.6	1572.5	1569.9	1565.9	1562.0	1558.0	1554.0	1556.5
15°	1545.3	1544.2	1543.0	1541.9	1540.7	1538.0	1533.6	1529.3	1524.9	1520.6	1522.3
17.5°	1507.1	1505.6	1504.1	1502.8	1501.3	1498.5	1494.4	1490.3	1486.2	1482.1	1483.2
20°	1479.0	1477.5	1476.0	1474.6	1473.2	1470.2	1465.9	1461.6	1457.3	1452.9	1453.8
22.5°	1448.7	1446.8	1445.0	1443.0	1441.1	1437.9	1433.6	1429.3	1425.0	1420.6	1422.2
25°	1399.5	1397.5	1395.5	1393.4	1391.4	1388.4	1384.3	1380.3	1376.2	1372.1	1372.5
27.5°	1343.3	1341.2	1339.1	1337.0	1335.0	1332.0	1328.3	1324.5	1320.8	1317.0	1316.3
30°	1305.8	1303.5	1301.1	1298.9	1296.6	1293.5	1289.7	1286.0	1282.2	1278.5	1277.3
32.5°	1266.2	1264.1	1262.1	1260.0	1257.8	1254.8	1250.8	1246.8	1242.8	1238.8	1237.5
35°	1204.3	1202.2	1200.2	1198.2	1196.1	1193.1	1189.0	1185.0	1181.0	1176.9	1174.8
37.5°	1138.9	1137.0	1135.2	1133.3	1131.5	1128.4	1124.1	1119.7	1115.3	1111.0	1108.8
40°	1096.2	1093.9	1091.5	1089.2	1087.0	1083.6	1079.3	1074.9	1070.6	1066.2	1063.3
42.5°	1050.4	1049.0	1047.6	1046.2	1044.8	1041.7	1036.9	1032.1	1027.3	1022.5	1019.1
45°	982.9	980.9	978.8	976.8	974.9	971.5	966.9	962.2	957.6	953.0	949.8
47.5°	912.3	910.9	909.5	908.2	906.8	904.0	899.7	895.4	891.1	886.9	883.3
50°	864.5	863.3	862.1	861.0	859.8	857.2	853.1	849.1	845.1	841.0	837.0
52.5°	817.6	816.2	814.8	813.4	812.0	809.2	804.9	800.6	796.4	792.1	788.5
55°	743.4	742.5	741.7	740.8	739.9	737.4	733.4	729.4	725.3	721.2	717.8
57.5°	672.5	671.6	670.6	669.6	668.6	666.1	662.1	658.1	654.1	650.1	646.9
60°	623.6	622.2	620.7	619.3	617.8	615.2	611.5	607.7	603.9	600.1	597.5
62.5°	575.7	574.5	573.2	572.0	570.9	568.3	564.3	560.3	556.3	552.3	549.9
65°	503.9	502.4	500.9	499.5	498.1	495.9	493.0	490.1	487.2	484.3	481.4
67.5°	431.5	430.2	428.8	427.5	426.2	424.0	421.3	418.5	415.7	412.9	410.2
70°	386.7	384.7	382.6	380.6	378.5	376.4	374.1	371.8	369.4	367.1	364.8
72.5°	338.8	336.7	334.7	332.6	330.7	328.7	326.9	325.0	323.2	321.3	319.4
75°	268.2	266.8	265.3	263.8	262.4	261.0	259.5	258.0	256.7	255.2	254.0
77.5°	200.7	200.1	199.5	198.9	198.2	197.2	196.0	194.7	193.5	192.2	191.8
80°	160.1	159.2	158.4	157.5	156.7	156.0	155.4	154.7	154.2	153.6	153.0
82.5°	120.6	120.2	119.8	119.4	119.0	118.7	118.5	118.5	118.3	118.2	117.9
85°	70.3	70.3	70.3	70.3	70.3	70.0	69.5	68.9	68.2	67.7	67.7
87.5°	27.1	27.1	27.1	27.1	26.9	26.7	27.0	26.7	26.7	26.7	26.6
90°	0.5	1.4	2.8	3.3	3.8	3.8	6.5	6.5	7.4	8.4	7.9
92.5°	5.3	7.7	12.1	17.8	24.5	34.2	57.9	93.9	129.1	147.5	122.9
95°	15.3	16.7	21.4	27.5	38.6	58.1	98.6	174.9	286.0	379.0	389.7
97.5°	27.6	27.6	31.6	37.1	46.7	63.1	94.2	157.2	267.7	399.3	489.7
100°	35.4	35.4	38.6	44.2	53.0	67.9	95.3	147.9	242.8	373.9	493.0
102.5°	42.8	43.5	46.4	51.6	60.1	74.2	99.1	145.3	226.0	342.3	465.0
105°	54.4	55.8	58.1	63.8	72.1	85.6	107.9	146.5	211.7	305.1	414.4
107.5°	67.3	68.2	70.5	76.5	84.5	97.8	118.2	153.4	209.0	284.3	373.5
110°	75.8	76.7	79.1	84.6	93.0	105.6	126.0	158.6	209.8	277.2	353.0



TEST NUMBER: P332687-930

CATALOG NUMBER: S124DIP-S1195D590U930-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	84.0	85.0	87.6	92.9	101.2	113.7	133.5	164.2	212.0	273.9	341.4
115°	95.8	97.2	100.4	105.1	114.0	126.5	145.1	173.0	216.3	272.1	330.7
117.5°	108.1	109.4	112.3	117.4	125.6	138.7	156.4	182.1	220.8	271.6	325.9
120°	116.3	117.2	120.4	125.6	133.5	146.5	164.2	188.3	224.2	271.6	323.3
122.5°	123.7	124.7	127.9	132.6	141.3	153.9	171.6	194.3	227.6	271.3	320.2
125°	133.5	135.3	138.1	143.2	152.1	165.1	181.8	203.3	232.5	270.7	315.4
127.5°	142.1	143.7	147.0	152.8	162.0	175.1	191.4	211.0	236.5	269.6	308.8
130°	147.0	148.8	152.5	159.6	168.4	181.8	197.6	215.8	239.5	269.3	304.6
132.5°	151.8	153.3	158.2	164.8	174.3	187.0	202.8	220.6	242.1	268.9	300.9
135°	158.6	160.5	165.1	173.0	182.8	194.9	210.2	227.0	246.1	268.3	295.3
137.5°	165.4	167.1	172.3	179.8	190.0	201.5	215.8	231.5	248.3	268.2	290.5
140°	170.2	171.6	176.8	184.7	194.4	205.5	219.6	234.4	250.2	267.9	287.9
142.5°	175.5	176.8	181.6	189.1	198.5	209.3	222.9	236.6	251.7	267.9	285.7
145°	182.8	184.2	188.8	195.3	204.2	214.4	226.5	239.0	252.6	266.9	281.8
147.5°	191.0	191.5	195.6	202.3	209.7	218.9	230.2	241.2	253.0	265.3	278.4
150°	196.2	196.7	200.5	206.0	213.0	221.8	232.1	242.3	253.0	264.2	275.8
152.5°	201.1	201.2	204.9	210.1	216.4	224.5	233.6	243.0	252.3	262.3	272.8
155°	207.9	208.4	211.2	215.8	220.9	227.9	235.8	243.7	251.1	259.5	268.3
157.5°	214.5	214.5	217.1	220.7	225.2	230.6	237.4	243.7	250.0	256.7	263.8
160°	218.6	218.6	220.5	223.7	227.4	232.5	238.1	243.7	248.8	254.4	260.5
162.5°	222.3	221.9	223.4	226.3	229.7	233.7	238.9	243.7	247.7	252.2	257.5
165°	226.5	226.5	227.4	229.8	232.1	234.9	239.0	242.8	245.6	248.8	252.6
167.5°	230.6	230.2	230.6	232.4	233.7	235.9	239.0	241.7	243.4	245.5	248.1
170°	232.5	232.1	232.5	233.9	234.9	236.3	238.6	240.9	241.8	243.2	245.1
172.5°	234.4	233.9	234.0	235.1	235.6	236.6	238.2	240.2	240.4	241.0	242.5
175°	236.3	235.8	235.8	236.3	236.8	236.8	237.7	239.0	238.6	238.6	239.5
177.5°	237.1	236.8	236.4	236.8	236.8	236.8	237.1	237.8	237.1	237.1	237.5
180°	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8



TEST NUMBER: P332687-930

CATALOG NUMBER: S124DIP-S1195D590U930-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7	1624.7
2.5°	1618.9	1621.3	1623.6	1624.6	1624.4	1624.2	1623.9	1623.7
5°	1610.3	1613.5	1616.7	1618.0	1617.4	1616.8	1616.2	1615.6
7.5°	1592.4	1594.9	1597.4	1598.6	1598.2	1597.8	1597.5	1597.2
10°	1577.3	1579.6	1581.9	1582.8	1582.3	1581.7	1581.0	1580.5
12.5°	1559.0	1561.5	1564.2	1565.0	1564.2	1563.3	1562.5	1561.7
15°	1524.0	1525.8	1527.5	1528.0	1527.1	1526.2	1525.3	1524.5
17.5°	1484.3	1485.4	1486.5	1486.7	1486.1	1485.6	1485.0	1484.4
20°	1454.7	1455.5	1456.4	1456.5	1456.0	1455.4	1454.8	1454.2
22.5°	1423.8	1425.3	1426.9	1427.1	1426.1	1425.1	1424.0	1422.9
25°	1372.8	1373.0	1373.4	1372.9	1371.7	1370.6	1369.5	1368.3
27.5°	1315.6	1314.9	1314.2	1313.1	1311.7	1310.3	1308.8	1307.3
30°	1276.1	1275.0	1273.8	1272.5	1271.1	1269.7	1268.2	1266.7
32.5°	1236.1	1234.7	1233.3	1231.9	1230.4	1229.0	1227.6	1226.1
35°	1172.9	1170.9	1168.8	1167.1	1165.6	1164.2	1162.7	1161.3
37.5°	1106.6	1104.4	1102.2	1100.2	1098.3	1096.3	1094.5	1092.5
40°	1060.5	1057.5	1054.7	1052.5	1051.1	1049.6	1048.1	1046.7
42.5°	1015.8	1012.4	1009.1	1006.9	1005.9	1004.9	1004.0	1003.0
45°	946.6	943.5	940.3	938.2	937.3	936.5	935.6	934.7
47.5°	879.7	876.1	872.5	869.6	867.4	865.2	863.0	860.8
50°	832.9	828.8	824.8	821.9	820.2	818.5	816.7	815.0
52.5°	784.9	781.3	777.7	774.9	772.7	770.5	768.3	766.1
55°	714.3	710.9	707.4	704.7	703.0	701.3	699.5	697.8
57.5°	643.6	640.3	637.0	634.5	632.8	631.1	629.4	627.8
60°	594.9	592.4	589.8	587.7	586.3	584.8	583.4	582.0
62.5°	547.5	545.1	542.7	540.9	539.4	537.9	536.5	535.1
65°	478.5	475.6	472.7	470.6	469.1	467.7	466.2	464.8
67.5°	407.4	404.6	401.9	400.2	399.8	399.4	399.0	398.6
70°	362.5	360.2	357.8	356.3	355.4	354.6	353.7	352.8
72.5°	317.6	315.8	313.9	312.5	311.7	310.8	309.9	309.1
75°	252.8	251.7	250.5	249.8	249.6	249.2	248.9	248.7
77.5°	191.4	191.1	190.8	190.2	189.5	188.7	187.9	187.2
80°	152.5	151.9	151.3	150.9	150.6	150.3	150.0	149.7
82.5°	117.5	117.2	116.8	116.5	116.2	115.9	115.6	115.4
85°	67.7	67.7	67.7	67.6	67.3	66.9	66.7	66.4
87.5°	26.7	26.7	26.8	26.8	27.0	27.1	27.0	27.0
90°	8.4	8.8	9.3	9.3	9.8	10.2	9.8	9.8
92.5°	91.3	68.7	54.7	45.4	39.9	37.4	35.8	35.8
95°	344.6	272.6	210.2	165.1	142.4	127.9	119.5	113.5
97.5°	509.2	482.4	436.9	388.3	355.0	326.9	313.0	303.3
100°	560.9	570.2	547.4	513.0	472.5	444.2	430.2	426.5
102.5°	558.3	604.5	611.1	596.7	571.9	551.3	536.6	533.6
105°	520.9	601.4	647.4	666.5	667.4	663.7	657.1	654.4
107.5°	467.8	553.4	618.3	659.7	682.7	693.3	698.0	699.2
110°	435.8	516.2	583.7	634.9	667.9	687.4	695.8	699.9



TEST NUMBER: P332687-930

CATALOG NUMBER: S124DIP-S1195D590U930-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	412.4	483.5	547.2	598.3	635.9	659.5	671.2	678.0
115°	388.8	446.1	500.4	545.1	581.8	609.8	624.6	628.4
117.5°	377.2	424.6	467.4	505.2	536.6	560.0	575.1	578.0
120°	372.1	415.3	452.5	485.5	512.1	532.6	544.6	549.8
122.5°	367.6	409.4	443.2	472.1	494.6	512.1	522.3	527.4
125°	360.0	400.0	432.0	457.6	476.2	489.8	498.6	501.3
127.5°	350.7	388.9	420.9	445.2	463.9	475.9	483.3	486.1
130°	343.2	380.0	411.6	436.3	455.3	466.9	474.4	477.2
132.5°	335.4	369.9	400.8	425.4	444.2	457.3	464.3	467.2
135°	324.7	354.9	383.2	406.5	425.1	438.1	445.6	448.3
137.5°	314.9	340.5	364.4	385.4	402.8	415.6	421.8	425.1
140°	309.2	331.2	352.0	371.6	387.9	398.1	404.6	408.4
142.5°	304.1	323.3	341.3	358.2	372.6	382.1	387.9	390.4
145°	296.7	312.5	326.5	339.5	351.1	359.1	363.7	366.0
147.5°	290.7	303.2	314.4	324.7	333.2	340.0	343.5	344.4
150°	287.0	297.7	307.0	315.4	322.8	328.8	331.6	332.1
152.5°	282.8	292.0	300.6	307.5	313.8	318.8	320.4	320.9
155°	276.7	284.1	291.1	296.7	301.4	305.1	306.5	306.5
157.5°	270.1	276.4	282.2	286.7	290.2	293.0	293.8	293.8
160°	266.0	271.2	276.2	280.0	282.7	285.6	286.0	286.0
162.5°	262.0	266.3	270.3	273.7	275.7	278.5	279.0	278.6
165°	256.2	259.0	262.3	264.6	266.5	268.3	267.9	267.4
167.5°	250.8	252.9	255.5	256.9	257.9	259.0	258.9	258.6
170°	247.4	248.8	250.7	252.1	253.0	253.5	253.0	253.0
172.5°	244.4	245.5	246.6	247.6	248.2	248.7	248.2	247.4
175°	240.4	240.9	241.8	241.8	241.8	242.8	241.8	240.9
177.5°	237.8	238.2	238.2	238.6	238.2	238.6	237.8	237.1
180°	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8

(END OF REPORT)