

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: P332685-930

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332685-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,  
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-F  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 590 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6094.5 lumens  
Efficiency: N/A  
Efficacy: 110.6 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

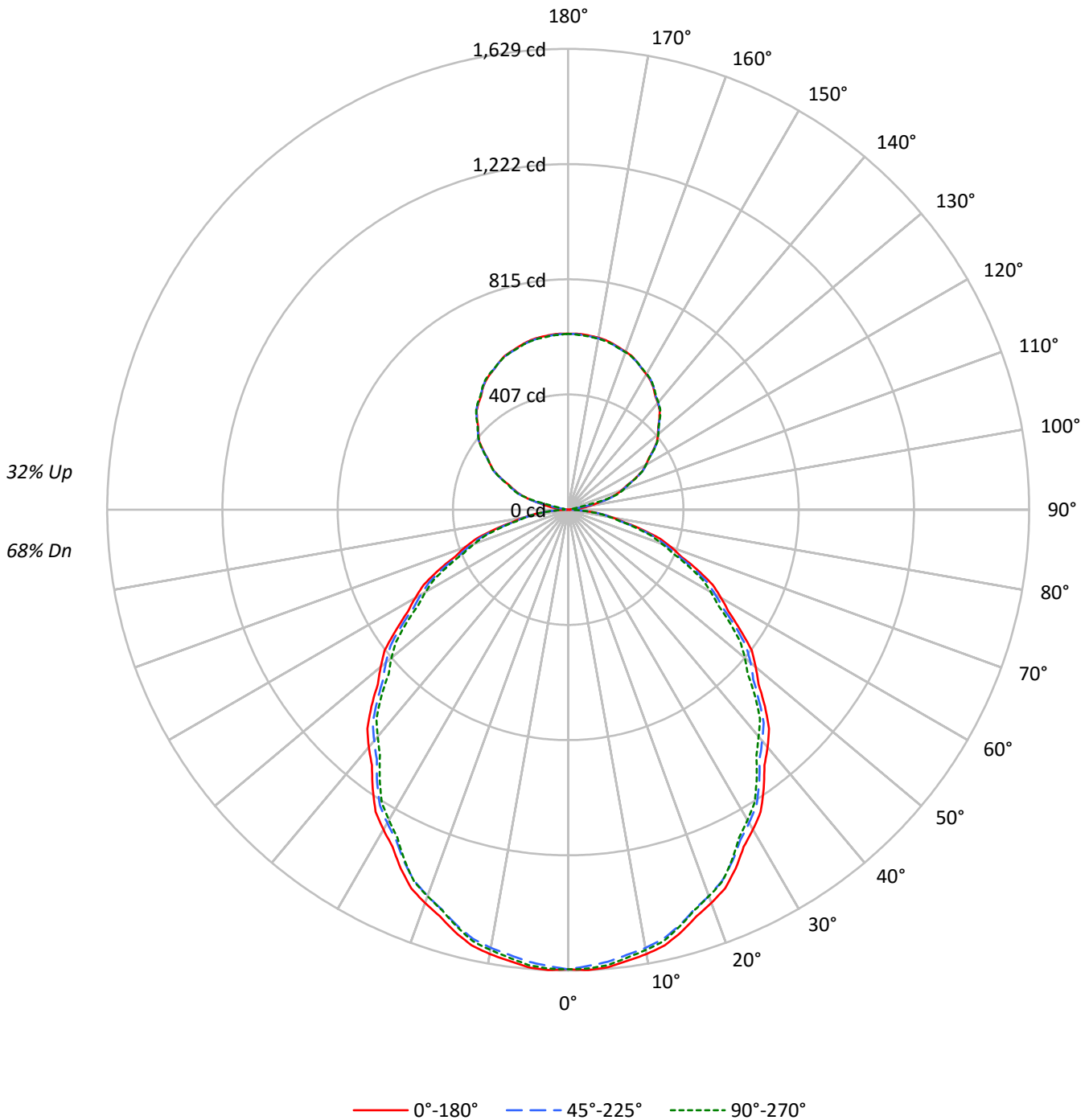
Input Watts (W): 55.1  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	105	105	105	105	94	94	94	83	83	83	73	73	73	68
1	102	97	93	90	96	92	89	85	82	79	77	73	71	69	65	63	62	58
2	93	85	79	73	87	81	75	70	72	68	64	64	61	58	57	54	52	48
3	85	75	67	61	80	71	64	59	64	58	54	57	52	49	50	47	44	41
4	78	66	58	52	73	63	56	50	56	51	46	51	46	42	45	41	38	35
5	71	59	51	45	67	56	49	43	51	44	40	45	40	36	41	36	33	30
6	66	53	45	39	62	51	43	37	46	39	35	41	36	32	37	33	29	27
7	61	48	40	34	57	46	38	33	42	35	31	37	32	28	34	29	26	24
8	57	44	36	30	53	42	34	29	38	32	27	34	29	25	31	27	23	21
9	53	40	32	27	50	38	31	26	35	29	25	32	27	23	29	24	21	19
10	49	37	29	25	47	35	28	24	32	26	22	29	24	21	27	22	19	17

**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



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	153.0	2.5
10°-20°	431.1	7.1
20°-30°	634.5	10.4
30°-40°	737.7	12.1
40°-50°	737.7	12.1
50°-60°	645.3	10.6
60°-70°	479.2	7.9
70°-80°	272.3	4.5
80°-90°	80.4	1.3
90°-100°	21.3	0.3
100°-110°	135.6	2.2
110°-120°	259.4	4.3
120°-130°	329.3	5.4
130°-140°	352.3	5.8
140°-150°	329.4	5.4
150°-160°	265.7	4.4
160°-170°	171.4	2.8
170°-180°	59.1	1.0
0°-30°	1218.6	20.0
0°-40°	1956.3	32.1
0°-60°	3339.3	54.8
0°-90°	4171.2	68.4
90°-120°	416.3	6.8
90°-150°	1427.3	23.4
90°-180°	1923.0	31.6
0°-180°	6094.5	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°	1	6	10	13	14	5
95°	26	11	10	13	14	33
105°	140	143	145	148	133	146
115°	261	263	262	263	263	257
125°	367	369	368	370	370	328
135°	456	455	457	458	459	351
145°	526	527	527	527	528	328
155°	576	577	575	577	576	266
165°	608	606	606	609	605	172
175°	622	619	620	623	618	59
180°	622	622	622	622	622	



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**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°	27.4	27.4	27.3	27.3	27.3	27.3	27.2	27.1	27.1	27.1	27.1
90°	1.4	2.5	3.7	4.8	6.0	6.9	7.7	8.6	9.4	10.2	10.8
92.5°	5.9	6.0	6.0	6.0	6.1	6.5	7.4	8.2	9.0	9.9	10.5
95°	25.6	22.1	18.6	15.0	11.5	9.8	9.9	10.0	10.1	10.2	10.8
97.5°	54.3	56.5	58.7	60.9	63.1	58.4	46.9	35.4	23.8	12.3	12.3
100°	76.2	78.1	80.0	81.9	83.7	77.5	63.3	49.0	34.7	20.5	18.7
102.5°	100.9	102.2	103.5	104.9	106.3	106.1	104.2	102.3	100.4	98.6	79.7
105°	140.0	140.6	141.2	141.9	142.4	143.0	143.6	144.1	144.6	145.1	146.0
107.5°	176.3	176.7	177.0	177.2	177.6	178.1	178.8	179.5	180.2	180.9	181.4
110°	200.9	201.2	201.5	201.9	202.1	202.6	203.3	203.8	204.5	205.1	205.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	224.7	225.3	225.8	226.4	227.0	227.4	227.6	228.0	228.3	228.5	228.5
115°	261.4	261.7	262.0	262.3	262.6	262.7	262.6	262.5	262.4	262.3	262.5
117.5°	294.4	294.8	295.2	295.6	296.0	296.4	296.6	296.9	297.0	297.3	297.3
120°	316.7	317.2	317.6	318.0	318.4	318.5	318.5	318.3	318.2	318.1	318.3
122.5°	337.5	337.8	338.0	338.3	338.5	338.8	338.9	339.0	339.2	339.3	339.4
125°	367.4	367.8	368.3	368.7	369.1	369.2	368.9	368.8	368.5	368.4	368.7
127.5°	395.7	395.7	395.9	396.0	396.1	396.4	396.9	397.3	397.8	398.3	398.2
130°	413.9	414.0	414.1	414.3	414.3	414.5	414.8	415.2	415.5	415.8	415.9
132.5°	430.6	430.8	431.0	431.2	431.4	431.7	432.1	432.4	432.8	433.3	433.3
135°	455.8	455.7	455.6	455.4	455.3	455.5	455.9	456.3	456.7	457.1	457.4
137.5°	478.0	478.0	478.1	478.1	478.2	478.4	478.8	479.3	479.8	480.2	480.5
140°	492.5	492.7	492.9	493.1	493.3	493.5	493.7	494.0	494.2	494.4	494.6
142.5°	505.6	505.9	506.3	506.6	507.0	507.3	507.4	507.5	507.6	507.8	508.0
145°	525.5	525.9	526.1	526.4	526.8	526.9	526.9	526.9	526.9	526.9	527.0
147.5°	541.4	542.0	542.6	543.2	543.7	544.0	543.9	543.8	543.6	543.6	543.6
150°	552.9	553.3	553.8	554.2	554.6	554.8	554.6	554.6	554.5	554.3	554.3
152.5°	562.6	563.0	563.3	563.6	563.9	564.0	563.9	563.7	563.5	563.3	563.5
155°	576.3	576.3	576.4	576.5	576.7	576.5	576.3	575.9	575.6	575.3	575.7
157.5°	587.7	587.6	587.5	587.5	587.4	587.2	586.9	586.5	586.1	585.8	586.4
160°	594.4	594.0	593.7	593.5	593.1	592.9	592.8	592.7	592.6	592.5	593.1
162.5°	600.3	599.9	599.5	599.2	598.8	598.5	598.3	598.3	598.2	598.1	598.7
165°	607.8	607.3	606.8	606.3	605.8	605.5	605.5	605.5	605.5	605.5	606.3
167.5°	613.8	613.3	612.7	612.2	611.6	611.3	611.3	611.2	611.1	611.1	612.0
170°	617.2	616.5	615.9	615.3	614.7	614.4	614.5	614.6	614.7	614.8	615.6
172.5°	619.4	618.7	618.2	617.5	616.9	616.6	616.8	616.9	616.9	617.0	617.9
175°	621.8	621.2	620.5	620.0	619.3	619.1	619.1	619.3	619.4	619.5	620.4
177.5°	622.9	622.3	621.7	621.2	620.6	620.4	620.5	620.7	620.9	621.0	621.7
180°	621.8	621.8	621.8	621.8	621.8	621.8	621.8	621.8	621.8	621.8	621.8



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**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°	27.3	27.4	27.6	27.6	27.6	27.7	27.7	27.8
90°	11.5	12.1	12.7	13.1	13.4	13.5	13.8	13.9
92.5°	11.1	11.7	12.3	12.6	12.7	12.7	12.8	12.8
95°	11.5	12.1	12.7	13.0	13.2	13.3	13.4	13.5
97.5°	12.4	12.5	12.6	12.6	12.7	12.8	12.9	13.0
100°	17.0	15.2	13.5	12.6	12.7	12.8	12.9	13.0
102.5°	60.7	41.7	22.7	13.3	13.4	13.4	13.4	13.4
105°	147.0	147.9	148.8	147.4	143.7	140.0	136.2	132.6
107.5°	181.8	182.3	182.7	183.1	183.5	183.9	184.3	184.7
110°	205.5	205.7	205.9	206.2	206.5	206.8	207.1	207.4





TEST NUMBER: P332685-930

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

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	228.4	228.4	228.4	228.5	228.9	229.3	229.8	230.1
115°	262.7	262.9	263.1	263.3	263.3	263.3	263.3	263.3
117.5°	297.2	297.2	297.1	297.1	297.0	297.0	296.9	296.9
120°	318.5	318.7	318.9	318.9	318.7	318.5	318.3	318.1
122.5°	339.6	339.7	339.8	339.7	339.6	339.3	339.2	338.9
125°	368.9	369.2	369.6	369.8	369.9	370.0	370.1	370.2
127.5°	398.2	398.1	398.0	397.9	397.9	397.8	397.7	397.6
130°	416.0	416.0	416.2	416.2	416.2	416.2	416.2	416.2
132.5°	433.5	433.6	433.7	433.7	433.6	433.5	433.4	433.3
135°	457.5	457.8	458.0	458.2	458.4	458.6	458.9	459.0
137.5°	480.7	480.9	481.1	481.2	481.2	481.1	481.0	480.9
140°	495.0	495.3	495.6	495.8	495.9	496.0	496.1	496.2
142.5°	508.2	508.4	508.7	508.8	508.8	508.8	508.8	508.9
145°	527.1	527.3	527.3	527.5	527.7	527.9	528.2	528.3
147.5°	543.7	543.8	543.9	544.0	544.1	544.2	544.3	544.4
150°	554.3	554.3	554.3	554.4	554.5	554.6	554.7	554.8
152.5°	563.6	563.8	563.9	564.0	563.9	563.9	563.8	563.8
155°	576.1	576.5	576.9	577.0	576.7	576.3	576.1	575.8
157.5°	586.9	587.4	587.9	587.9	587.4	586.9	586.4	585.8
160°	593.7	594.4	595.0	595.0	594.4	593.7	593.1	592.5
162.5°	599.3	599.9	600.5	600.5	599.8	599.1	598.4	597.7
165°	607.2	608.0	608.9	608.8	607.8	606.9	606.0	605.0
167.5°	612.9	613.8	614.7	614.7	613.7	612.6	611.6	610.6
170°	616.4	617.3	618.2	618.0	617.0	616.0	614.9	613.9
172.5°	618.7	619.5	620.4	620.2	619.1	618.0	616.9	615.7
175°	621.3	622.2	623.2	623.1	621.8	620.5	619.3	618.1
177.5°	622.4	623.1	623.7	623.5	622.6	621.6	620.5	619.5
180°	621.8	621.8	621.8	621.8	621.8	621.8	621.8	621.8

(END OF REPORT)