

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: P331428-830

Luminaire Tested: **S122DIP-S1005D330U830-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331428-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIP-S1005D330U830-4F0-1E-UDD-F4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1005 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 330 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5028.6 lumens  
Efficiency: N/A  
Efficacy: 101.0 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Direct

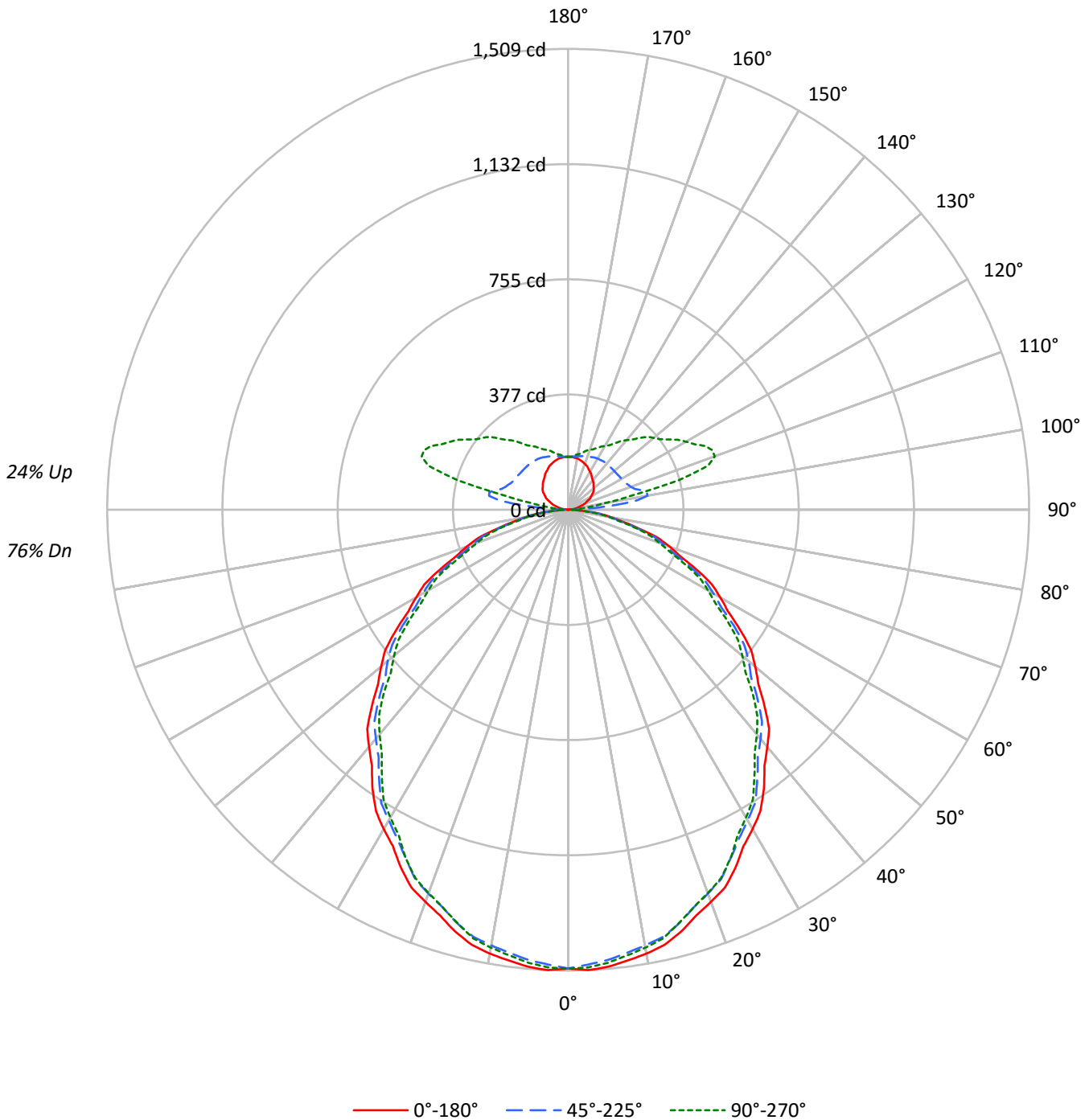
Input Watts (W): 49.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	113	113	113	113	108	108	108	108	98	98	98	89	89	89	80	80	80	76
1	104	99	95	91	98	95	91	88	86	83	81	78	76	74	71	69	68	64
2	94	87	80	75	90	83	77	72	75	71	67	69	65	62	62	60	57	54
3	86	76	69	62	82	73	66	60	67	61	56	61	56	52	55	52	49	45
4	79	68	59	53	75	65	57	51	59	53	48	54	49	45	49	45	42	39
5	73	60	52	46	69	58	50	44	53	47	42	49	43	39	45	40	37	34
6	67	54	46	40	64	52	44	39	48	41	36	44	39	34	40	36	32	30
7	62	49	41	35	59	47	40	34	44	37	32	40	35	30	37	32	29	26
8	58	45	37	31	55	43	36	30	40	33	29	37	31	27	34	29	26	24
9	54	41	33	28	51	40	32	27	37	30	26	34	29	25	31	27	23	21
10	50	38	30	25	48	37	29	25	34	28	24	32	26	22	29	25	21	19

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

	0°	45°	90°
0°	24254	24254	24254
5°	24347	23995	24136
10°	24202	23753	23871
15°	23903	23445	23422
20°	23479	22983	22957
25°	23058	22413	22413
30°	22514	21893	21705
35°	22007	21268	20954
40°	21372	20643	20244
45°	20747	20021	19527
50°	20065	19376	18686
55°	19356	18624	17931
60°	18564	17725	17073
65°	17712	16829	16061
70°	16636	15753	15002
75°	15140	14504	14148
80°	13436	13036	12357
85°	10967	10448	9355



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	141.3	2.8
10°-20°	397.5	7.9
20°-30°	584.2	11.6
30°-40°	678.6	13.5
40°-50°	677.9	13.5
50°-60°	591.2	11.8
60°-70°	437.1	8.7
70°-80°	247.6	4.9
80°-90°	68.1	1.4
90°-100°	69.2	1.4
100°-110°	235.0	4.7
110°-120°	249.6	5.0
120°-130°	205.5	4.1
130°-140°	165.0	3.3
140°-150°	124.7	2.5
150°-160°	87.6	1.7
160°-170°	51.6	1.0
170°-180°	16.8	0.3
0°-30°	1123.0	22.3
0°-40°	1801.6	35.8
0°-60°	3070.7	61.1
0°-90°	3823.5	76.0
90°-120°	553.8	11.0
90°-150°	1049.0	20.9
90°-180°	1205.0	24.0
0°-180°	5028.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1502	1502	1502	1502	1502	
5°	1502	1496	1480	1491	1489	142
15°	1430	1421	1403	1408	1401	402
25°	1294	1282	1258	1261	1258	595
35°	1116	1102	1079	1070	1063	697
45°	909	898	877	862	855	701
55°	688	678	662	645	637	615
65°	464	455	440	428	420	458
75°	243	240	232	225	227	259
85°	59	58	56	52	50	68
90°	0	4	11	11	11	4
95°	12	29	130	49	38	12
105°	41	61	247	441	375	43
115°	72	90	206	426	494	71
125°	100	118	198	345	401	89
135°	117	140	196	290	332	91
145°	134	154	195	242	265	84
155°	152	164	190	214	223	70
165°	166	171	182	192	196	47
175°	173	173	174	177	176	16
180°	173	173	173	173	173	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2
2.5°	1509.2	1507.9	1506.7	1505.3	1504.0	1502.0	1499.2	1496.4	1493.6	1490.7	1493.3
5°	1502.2	1501.0	1499.7	1498.4	1497.1	1494.7	1491.2	1487.6	1484.1	1480.5	1483.2
7.5°	1488.9	1487.0	1485.0	1483.0	1481.0	1478.2	1474.6	1471.0	1467.4	1463.9	1466.4
10°	1476.2	1474.0	1471.8	1469.5	1467.3	1464.2	1460.4	1456.5	1452.6	1448.8	1451.4
12.5°	1459.0	1456.9	1454.9	1452.9	1451.0	1448.0	1444.2	1440.3	1436.5	1432.7	1434.5
15°	1430.0	1428.1	1426.2	1424.3	1422.3	1419.3	1415.1	1410.9	1406.7	1402.6	1403.9
17.5°	1393.1	1391.1	1389.2	1387.2	1385.3	1382.2	1378.0	1373.8	1369.5	1365.4	1366.8
20°	1366.5	1364.5	1362.6	1360.7	1358.8	1355.6	1351.0	1346.6	1342.1	1337.6	1338.5
22.5°	1339.9	1337.2	1334.5	1331.8	1329.1	1325.7	1321.4	1317.2	1313.0	1308.7	1308.9
25°	1294.3	1291.7	1289.1	1286.6	1284.0	1280.0	1274.5	1269.0	1263.6	1258.1	1258.8
27.5°	1242.3	1239.9	1237.7	1235.3	1233.0	1229.7	1225.4	1221.1	1216.8	1212.5	1211.5
30°	1207.6	1205.0	1202.4	1199.9	1197.3	1193.6	1188.8	1184.0	1179.2	1174.3	1173.4
32.5°	1170.6	1168.6	1166.5	1164.4	1162.3	1158.9	1153.8	1148.7	1143.6	1138.5	1136.8
35°	1116.5	1113.3	1110.1	1106.9	1103.7	1099.6	1094.4	1089.3	1084.2	1079.0	1077.1
37.5°	1055.6	1052.8	1050.0	1047.2	1044.3	1040.4	1035.2	1030.1	1024.9	1019.8	1017.4
40°	1014.0	1011.4	1008.9	1006.4	1003.7	999.9	994.8	989.7	984.5	979.4	976.5
42.5°	973.6	971.0	968.5	965.9	963.3	959.4	954.3	949.1	944.1	938.9	935.8
45°	908.6	906.3	904.1	901.8	899.6	896.1	891.3	886.5	881.7	876.8	873.3
47.5°	843.9	841.8	839.6	837.5	835.4	831.8	826.8	821.8	816.8	811.8	808.0
50°	798.8	797.2	795.6	794.0	792.4	789.3	784.9	780.3	775.8	771.4	766.9
52.5°	754.9	752.8	750.6	748.6	746.4	743.2	739.0	734.7	730.6	726.3	722.6
55°	687.6	685.6	683.7	681.8	679.9	676.9	673.2	669.3	665.4	661.6	657.7
57.5°	620.0	618.4	616.9	615.4	613.8	611.0	606.7	602.5	598.2	594.0	590.2
60°	574.9	573.6	572.3	571.1	569.8	566.8	562.4	557.9	553.4	548.9	545.4
62.5°	531.0	529.0	526.9	524.8	522.7	520.0	516.5	513.1	509.6	506.1	502.8
65°	463.6	461.8	459.9	457.9	456.0	453.4	450.2	447.0	443.7	440.5	437.7
67.5°	395.2	393.7	392.1	390.6	389.1	386.8	383.9	381.1	378.1	375.3	373.1
70°	352.4	351.2	349.9	348.6	347.3	345.3	342.3	339.4	336.6	333.7	331.4
72.5°	308.5	307.3	305.9	304.7	303.4	301.8	300.0	298.1	296.2	294.4	292.1
75°	242.7	242.0	241.4	240.7	240.1	238.9	237.3	235.7	234.1	232.5	230.6
77.5°	183.7	182.7	181.5	180.5	179.4	178.5	177.9	177.2	176.5	176.0	174.9
80°	144.5	144.1	143.8	143.5	143.2	142.7	142.0	141.4	140.7	140.2	139.1
82.5°	107.4	107.4	107.4	107.3	107.2	107.0	106.6	106.2	105.8	105.5	104.2
85°	59.2	58.9	58.6	58.2	58.0	57.6	57.3	56.9	56.6	56.4	55.3
87.5°	20.8	20.5	20.3	19.9	19.5	19.2	19.0	19.0	18.9	18.5	17.6
90°	0.4	1.3	2.6	3.3	4.0	5.0	6.7	9.0	11.0	11.3	11.0
92.5°	4.1	5.8	8.3	9.7	12.0	15.1	22.6	33.3	42.7	43.3	36.6
95°	11.7	13.0	16.3	19.3	24.6	32.6	48.0	76.9	115.6	130.5	114.2
97.5°	18.9	20.7	24.3	28.8	35.0	44.0	63.2	103.7	167.9	222.8	233.8
100°	25.6	26.7	29.6	35.0	41.7	51.0	68.6	109.2	181.2	263.1	311.0
102.5°	31.8	32.5	35.5	40.8	47.8	57.1	73.4	109.5	176.1	264.4	339.8
105°	40.6	41.9	44.3	49.3	56.6	66.0	81.6	111.2	166.2	246.8	335.4
107.5°	50.2	51.3	53.5	58.2	65.4	74.8	90.0	115.8	161.3	227.8	306.1
110°	56.6	58.0	59.9	64.3	71.3	81.0	95.6	119.5	160.2	218.8	287.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	62.5	63.8	66.1	70.1	76.8	86.8	100.9	123.6	160.4	212.9	274.9
115°	71.6	73.2	75.3	79.3	86.0	94.9	109.2	129.5	161.8	206.5	259.1
117.5°	81.1	82.4	84.4	87.9	94.3	103.7	116.9	135.9	164.3	203.3	249.1
120°	86.9	88.2	90.3	93.2	99.9	109.2	122.2	140.3	165.9	201.5	243.7
122.5°	92.6	93.6	95.6	98.9	105.5	115.1	127.2	143.9	167.7	200.4	239.2
125°	99.9	100.9	102.9	106.9	113.6	122.9	134.9	149.9	170.5	198.5	232.8
127.5°	105.8	107.1	109.9	114.3	120.6	130.3	141.9	155.4	173.3	197.4	226.8
130°	109.2	110.6	113.9	118.6	125.3	134.5	146.2	158.8	175.5	196.8	222.8
132.5°	112.4	114.0	117.6	122.5	129.5	138.8	150.0	162.3	177.7	196.5	219.6
135°	117.3	118.6	122.5	127.5	135.3	144.5	155.2	166.8	180.2	196.1	215.1
137.5°	121.8	123.4	127.3	132.7	140.3	148.9	159.5	170.3	182.5	196.0	212.0
140°	125.3	126.6	130.5	135.9	143.2	151.8	161.8	172.2	183.5	195.9	210.1
142.5°	128.7	129.8	133.5	138.8	145.9	154.0	163.7	173.8	184.3	195.9	208.3
145°	133.8	135.3	138.6	143.5	150.2	157.5	166.5	175.9	185.1	195.1	205.9
147.5°	139.5	140.4	143.6	148.3	153.8	160.3	168.8	177.0	185.4	194.0	203.3
150°	143.2	144.2	146.8	151.2	156.2	162.2	169.8	177.5	185.1	193.1	201.1
152.5°	146.9	147.4	150.1	153.8	158.6	164.0	170.9	177.8	184.6	191.8	199.3
155°	152.2	152.5	154.5	158.2	161.8	166.8	172.5	178.1	183.8	189.5	195.9
157.5°	156.6	156.9	158.5	161.7	164.7	168.8	173.6	178.1	182.3	187.1	192.6
160°	159.5	159.9	161.2	163.8	166.5	170.2	174.2	178.1	181.5	185.5	190.1
162.5°	162.5	162.2	163.6	165.7	168.1	171.0	174.5	177.9	180.7	184.2	188.0
165°	165.9	165.5	166.2	168.1	169.8	171.8	174.8	177.2	179.2	181.5	184.5
167.5°	168.6	168.2	168.8	170.1	171.4	172.6	174.7	176.7	177.7	179.2	181.1
170°	170.5	169.8	170.2	171.2	171.8	172.9	174.5	176.2	176.8	177.9	179.2
172.5°	171.5	171.2	171.0	172.0	172.4	173.1	174.3	175.4	175.8	176.3	177.3
175°	172.9	172.5	172.2	172.9	172.9	173.1	173.8	174.5	174.2	174.5	174.8
177.5°	173.4	172.9	172.7	173.1	173.1	173.1	173.4	174.0	173.4	173.1	173.4
180°	173.1	173.1	173.1	173.1	173.1	173.1	173.1	173.1	173.1	173.1	173.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2
2.5°	1495.8	1498.4	1501.0	1502.0	1501.5	1501.0	1500.4	1500.0
5°	1485.7	1488.3	1490.8	1491.9	1491.2	1490.5	1489.9	1489.2
7.5°	1469.0	1471.5	1474.1	1475.1	1474.3	1473.7	1472.9	1472.3
10°	1454.0	1456.5	1459.1	1459.9	1459.0	1457.9	1457.0	1456.0
12.5°	1436.2	1438.0	1439.8	1440.4	1439.6	1439.0	1438.2	1437.6
15°	1405.1	1406.5	1407.7	1407.6	1406.0	1404.4	1402.8	1401.2
17.5°	1368.3	1369.8	1371.2	1371.2	1369.6	1368.1	1366.6	1365.0
20°	1339.5	1340.5	1341.4	1341.2	1340.0	1338.7	1337.5	1336.1
22.5°	1309.1	1309.3	1309.5	1309.2	1308.4	1307.7	1306.8	1306.1
25°	1259.4	1260.1	1260.7	1260.7	1260.1	1259.4	1258.8	1258.1
27.5°	1210.6	1209.6	1208.6	1207.4	1205.9	1204.3	1202.8	1201.3
30°	1172.4	1171.5	1170.5	1169.4	1168.1	1166.8	1165.5	1164.2
32.5°	1135.1	1133.3	1131.6	1130.1	1128.8	1127.6	1126.2	1124.9
35°	1075.2	1073.3	1071.3	1069.6	1068.0	1066.4	1064.7	1063.1
37.5°	1015.0	1012.7	1010.3	1008.3	1006.8	1005.2	1003.7	1002.2
40°	973.6	970.7	967.8	965.7	964.4	963.2	961.9	960.5
42.5°	932.6	929.4	926.3	923.9	922.1	920.3	918.5	916.6
45°	869.8	866.2	862.7	860.3	858.9	857.7	856.4	855.2
47.5°	804.4	800.6	796.9	794.1	792.2	790.4	788.5	786.6
50°	762.3	757.9	753.4	750.4	748.8	747.2	745.6	743.9
52.5°	718.9	715.1	711.4	708.5	706.3	704.3	702.1	700.0
55°	653.8	650.0	646.2	643.5	641.9	640.3	638.7	637.0
57.5°	586.4	582.6	578.8	576.3	575.1	573.9	572.7	571.5
60°	541.9	538.3	534.8	532.5	531.6	530.7	529.6	528.7
62.5°	499.6	496.3	493.0	490.8	489.6	488.3	487.1	485.9
65°	434.8	431.9	429.0	426.8	425.2	423.6	422.0	420.4
67.5°	370.8	368.5	366.3	364.5	363.3	361.9	360.7	359.4
70°	329.1	327.0	324.7	322.9	321.6	320.4	319.1	317.8
72.5°	289.9	287.7	285.4	283.8	282.8	281.7	280.7	279.7
75°	228.8	226.8	224.9	224.2	224.9	225.5	226.1	226.8
77.5°	174.0	173.1	172.1	171.2	170.2	169.4	168.4	167.6
80°	138.2	137.2	136.3	135.4	134.8	134.2	133.6	132.9
82.5°	103.0	101.8	100.6	99.9	99.7	99.6	99.5	99.3
85°	54.4	53.4	52.5	51.8	51.6	51.2	50.9	50.5
87.5°	16.8	15.8	15.3	14.8	14.5	14.2	14.0	13.8
90°	10.7	10.0	10.7	11.0	11.0	11.0	11.0	11.0
92.5°	29.0	24.9	22.1	20.1	19.8	18.8	18.9	18.5
95°	87.3	66.9	53.0	45.6	41.3	38.6	37.6	38.0
97.5°	203.6	166.5	130.5	106.5	90.6	82.4	77.6	74.7
100°	304.1	262.8	217.2	176.8	149.2	134.9	125.3	119.2
102.5°	369.9	360.5	327.2	284.5	254.4	230.0	217.9	209.8
105°	404.6	442.2	446.6	435.6	414.9	394.3	379.9	375.3
107.5°	379.6	436.3	470.9	487.0	489.7	488.5	485.6	479.5
110°	358.0	417.6	460.2	487.6	501.9	508.2	511.2	510.9





TEST NUMBER: P331428-830

CATALOG NUMBER: S122DIP-S1005D330U830-4F0-1E-UDD-F4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	338.3	395.5	441.0	472.4	492.3	502.8	508.5	510.3
115°	314.1	365.3	409.0	443.3	466.9	482.2	490.9	493.9
117.5°	295.8	340.8	380.4	412.6	436.7	452.9	461.9	464.5
120°	286.7	328.0	363.4	393.6	417.0	432.6	442.2	445.6
122.5°	279.6	317.4	350.8	378.1	399.1	414.5	423.1	425.8
125°	269.1	303.4	332.7	357.7	377.0	389.6	397.9	400.7
127.5°	258.7	289.8	317.4	340.4	357.3	369.2	376.4	378.5
130°	252.1	280.8	307.1	329.0	345.3	356.7	363.4	366.0
132.5°	245.7	272.2	296.4	317.1	333.1	344.4	350.5	353.0
135°	236.8	258.7	280.8	299.4	313.7	324.7	330.7	332.1
137.5°	229.7	248.1	265.5	281.7	294.8	304.3	309.5	311.5
140°	225.1	241.1	256.5	271.1	281.7	290.4	295.4	297.4
142.5°	221.4	235.0	248.2	260.4	270.5	278.4	282.9	283.2
145°	216.1	227.2	237.4	247.1	255.1	260.8	264.1	265.0
147.5°	212.1	220.7	228.8	235.8	242.4	246.9	249.2	249.9
150°	209.2	216.5	223.5	229.4	234.4	238.5	240.4	240.8
152.5°	206.2	213.0	219.0	224.1	228.1	231.5	233.0	233.1
155°	202.2	207.5	212.4	216.1	219.8	222.2	223.5	222.8
157.5°	197.5	201.9	206.0	209.0	211.5	213.5	214.1	214.1
160°	194.4	198.1	201.8	204.2	206.5	208.1	208.5	208.5
162.5°	191.5	194.7	197.8	199.6	202.0	203.1	203.4	203.1
165°	187.2	189.5	191.8	193.1	194.4	195.9	195.9	195.5
167.5°	182.9	184.7	186.3	187.6	188.1	188.9	188.8	188.4
170°	180.9	181.8	183.1	183.8	184.2	185.1	184.8	184.2
172.5°	178.4	179.2	180.2	180.6	181.0	181.4	181.1	180.7
175°	175.9	176.2	176.5	176.8	176.8	177.2	176.8	176.2
177.5°	174.0	174.0	174.3	174.3	174.3	174.3	174.0	173.4
180°	173.1	173.1	173.1	173.1	173.1	173.1	173.1	173.1

(END OF REPORT)