

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: P332684-830

Luminaire Tested: **S124DIP-S1195D590U830-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332684-830
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-S1195D590U830-4F0-1E-UDD-D4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6573.5 lumens
Efficiency: N/A
Efficacy: 119.3 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: Semi-Direct

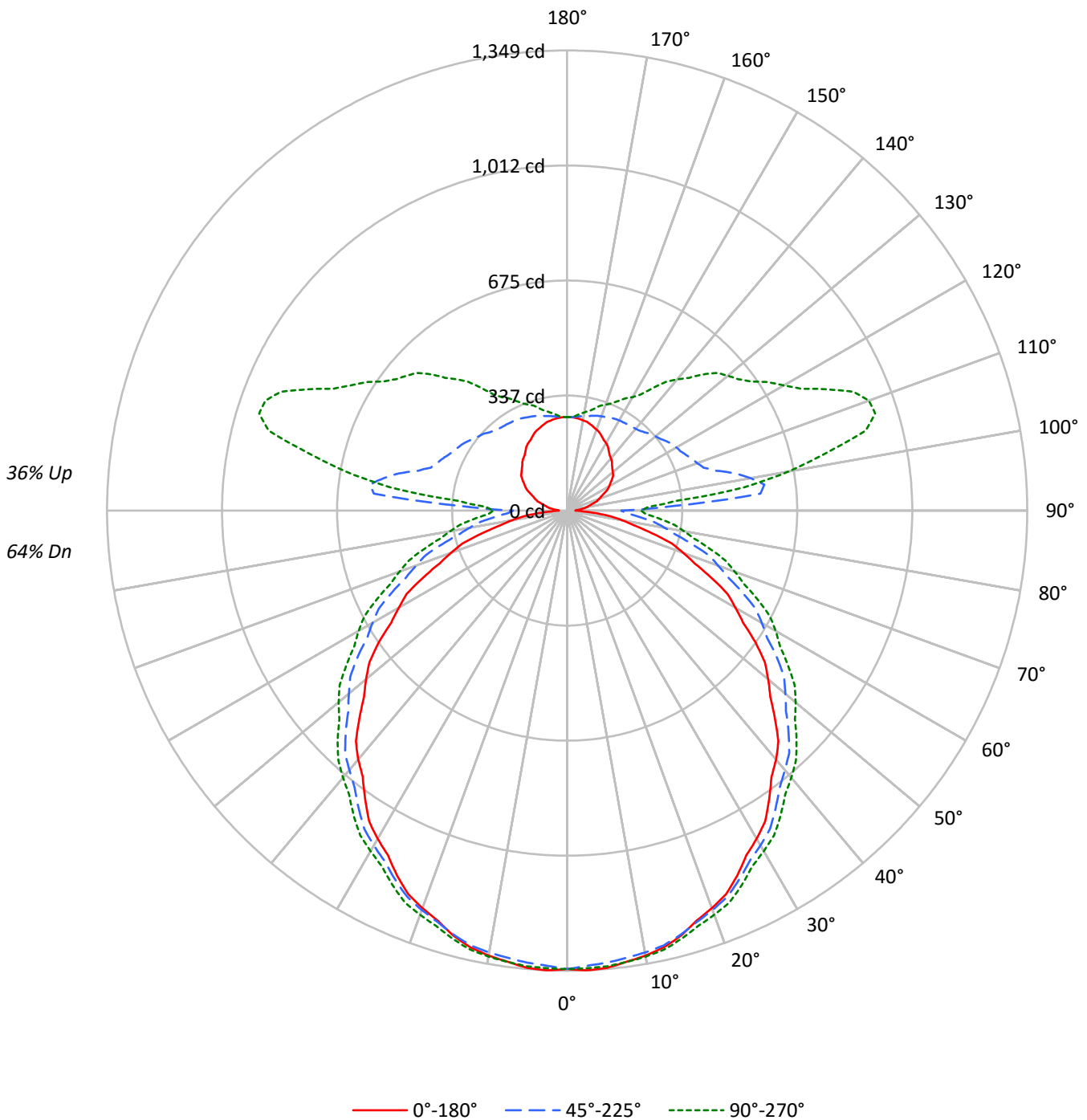
Input Watts (W): 55.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	111	111	111	104	104	104	104	91	91	91	80	80	80	69	69	69	64
1	100	95	90	86	93	89	85	81	78	75	72	68	66	64	59	58	56	52
2	90	82	75	69	84	77	71	66	68	63	59	59	56	52	51	49	46	42
3	82	72	64	57	77	67	60	54	59	54	49	52	47	44	45	42	39	35
4	75	63	55	48	70	59	52	46	53	46	41	46	41	37	40	36	33	30
5	69	56	47	41	64	53	45	39	47	40	36	41	36	32	36	32	28	25
6	63	50	42	35	59	47	40	34	42	36	31	37	32	28	32	28	25	22
7	58	45	37	31	55	43	35	30	38	32	27	34	28	25	30	25	22	20
8	54	41	33	27	51	39	32	26	35	29	24	31	26	22	27	23	20	17
9	51	38	30	24	47	36	28	23	32	26	22	28	23	20	25	21	18	16
10	47	35	27	22	44	33	26	21	29	23	19	26	21	18	23	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10851	10851	10851
5°	10884	10604	10635
10°	10818	10431	10423
15°	10721	10231	10174
20°	10574	10009	9931
25°	10410	9760	9665
30°	10231	9513	9392
35°	10029	9259	9152
40°	9868	9019	8902
45°	9628	8797	8688
50°	9425	8541	8461
55°	9216	8300	8195
60°	8889	7992	7953
65°	8532	7663	7655
70°	8098	7286	7308
75°	7493	6872	6995
80°	6823	6474	6686
85°	5963	6123	6505



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	127.3	1.9
10°-20°	364.7	5.5
20°-30°	551.4	8.4
30°-40°	667.1	10.1
40°-50°	705.3	10.7
50°-60°	663.8	10.1
60°-70°	550.7	8.4
70°-80°	386.8	5.9
80°-90°	220.2	3.3
90°-100°	327.5	5.0
100°-110°	507.5	7.7
110°-120°	433.0	6.6
120°-130°	346.4	5.3
130°-140°	274.2	4.2
140°-150°	200.6	3.1
150°-160°	138.8	2.1
160°-170°	81.6	1.2
170°-180°	26.6	0.4
0°-30°	1043.3	15.9
0°-40°	1710.5	26.0
0°-60°	3079.5	46.8
0°-90°	4237.3	64.5
90°-120°	1268.1	19.3
90°-150°	2089.2	31.8
90°-180°	2336.0	35.5
0°-180°	6573.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1344	1344	1344	1344	1344	
5°	1346	1341	1330	1342	1341	128
15°	1290	1291	1287	1300	1299	363
25°	1180	1189	1194	1209	1212	543
35°	1032	1050	1066	1086	1091	646
45°	861	890	918	943	951	665
55°	674	707	751	780	790	601
65°	467	515	566	602	616	462
75°	259	315	378	418	434	275
85°	80	143	211	254	271	85
90°	25	89	159	202	216	17
95°	37	126	569	387	316	35
105°	76	136	452	895	906	82
115°	120	164	385	707	841	119
125°	160	190	355	584	659	143
135°	186	222	324	493	565	144
145°	213	242	309	394	438	134
155°	240	259	300	340	354	111
165°	262	270	288	305	309	74
175°	273	274	276	280	278	26
180°	274	274	274	274	274	



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CATALOG NUMBER: S124DIP-S1195D590U830-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1
2.5°	1348.9	1348.0	1347.3	1346.4	1345.7	1344.2	1342.0	1339.9	1337.8	1335.6	1337.5
5°	1345.5	1344.5	1343.5	1342.6	1341.5	1339.8	1337.5	1335.1	1332.8	1330.5	1333.1
7.5°	1334.1	1333.5	1332.8	1332.3	1331.7	1330.4	1328.5	1326.5	1324.6	1322.7	1325.7
10°	1324.5	1324.1	1323.8	1323.4	1323.1	1322.1	1320.4	1318.8	1317.1	1315.4	1318.4
12.5°	1311.2	1311.2	1311.1	1311.0	1311.0	1310.3	1309.2	1308.1	1306.9	1305.8	1308.5
15°	1289.9	1290.2	1290.5	1290.8	1291.2	1290.8	1289.9	1288.8	1287.8	1286.9	1289.9
17.5°	1260.7	1261.7	1262.6	1263.7	1264.6	1265.1	1264.9	1264.6	1264.4	1264.2	1267.3
20°	1240.2	1241.1	1242.2	1243.2	1244.2	1244.8	1245.2	1245.6	1245.9	1246.2	1249.5
22.5°	1217.3	1218.5	1219.8	1221.1	1222.4	1223.3	1223.9	1224.6	1225.1	1225.7	1229.1
25°	1180.0	1181.9	1184.0	1186.0	1188.0	1189.5	1190.5	1191.5	1192.5	1193.5	1197.2
27.5°	1138.4	1141.4	1144.3	1147.3	1150.2	1152.4	1154.0	1155.6	1157.1	1158.6	1162.0
30°	1110.7	1113.4	1116.1	1118.8	1121.4	1124.0	1126.2	1128.6	1131.0	1133.3	1137.0
32.5°	1080.6	1083.8	1087.0	1090.2	1093.4	1096.4	1099.0	1101.6	1104.2	1106.8	1111.1
35°	1032.5	1036.5	1040.5	1044.5	1048.5	1052.2	1055.6	1058.9	1062.2	1065.5	1070.3
37.5°	984.0	988.6	993.3	997.9	1002.5	1006.8	1011.0	1015.1	1019.3	1023.4	1028.2
40°	952.7	957.1	961.4	965.7	970.1	974.6	979.3	984.0	988.6	993.3	998.3
42.5°	916.6	921.4	926.3	931.2	936.1	941.3	946.8	952.3	957.7	963.3	968.8
45°	860.9	867.2	873.6	880.0	886.3	892.7	899.0	905.4	911.7	918.1	923.8
47.5°	807.6	814.2	820.8	827.3	833.9	840.8	848.2	855.5	862.9	870.2	876.1
50°	769.1	776.5	783.8	791.2	798.5	805.9	813.2	820.6	827.9	835.3	842.0
52.5°	730.6	737.9	745.3	752.6	760.0	767.9	776.3	784.8	793.1	801.6	808.3
55°	674.3	681.3	688.3	695.3	702.4	710.9	721.0	730.9	741.0	751.0	757.7
57.5°	611.3	620.1	628.8	637.4	646.1	655.4	665.4	675.4	685.4	695.3	703.3
60°	570.4	579.1	587.8	596.5	605.2	615.1	626.1	637.2	648.2	659.2	666.9
62.5°	530.7	540.2	549.7	559.2	568.6	578.9	590.0	601.1	612.1	623.1	630.7
65°	466.6	477.3	488.0	498.7	509.3	520.4	531.8	543.2	554.5	565.9	574.3
67.5°	404.8	416.2	427.6	438.9	450.3	462.1	474.3	486.4	498.6	510.9	519.3
70°	362.7	374.1	385.5	396.8	408.2	420.3	432.9	445.6	458.4	471.1	480.1
72.5°	321.8	333.4	345.1	356.7	368.3	380.9	394.5	407.9	421.4	435.0	443.7
75°	258.9	271.3	283.6	296.0	308.4	321.6	335.6	349.7	363.7	377.8	387.1
77.5°	200.2	213.3	226.4	239.5	252.6	266.6	281.3	296.0	310.7	325.4	334.9
80°	164.1	177.4	190.8	204.2	217.5	231.6	246.3	261.1	275.8	290.5	300.5
82.5°	127.9	141.9	155.8	169.7	183.6	197.9	212.6	227.3	242.0	256.7	267.0
85°	79.7	93.8	107.8	121.9	135.9	150.5	165.5	180.6	195.7	210.8	220.7
87.5°	44.7	58.5	72.5	86.2	100.0	114.1	129.4	144.1	158.9	173.8	183.4
90°	24.6	39.1	54.1	68.0	81.9	95.8	113.4	127.8	143.3	158.7	167.9
92.5°	29.0	43.8	61.0	79.6	99.4	123.9	165.5	221.6	276.6	312.4	293.2
95°	37.3	50.0	66.4	84.4	108.3	143.3	203.8	305.7	447.9	569.1	590.5
97.5°	49.6	59.1	73.2	89.2	109.7	140.2	189.8	276.2	417.5	583.2	696.4
100°	57.4	66.1	78.6	93.7	112.6	140.7	185.5	259.3	382.0	546.7	693.3
102.5°	66.0	74.5	85.5	99.2	116.5	143.1	184.5	250.8	356.9	504.1	654.8
105°	76.4	84.7	94.2	107.3	123.7	148.7	186.9	243.9	331.6	452.0	586.7
107.5°	91.0	97.6	105.8	118.1	132.8	156.8	192.2	244.5	320.6	419.2	530.6
110°	99.7	105.5	112.8	123.9	138.3	161.0	196.4	245.7	316.6	406.2	501.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	107.9	113.2	120.5	130.6	144.4	166.6	200.6	247.2	313.7	396.3	481.9
115°	119.8	124.4	131.2	139.6	152.8	174.2	206.4	249.3	310.1	385.3	460.3
117.5°	133.7	137.0	142.1	149.9	161.3	182.2	212.5	252.2	307.0	375.7	445.4
120°	141.9	144.0	148.8	155.7	165.9	186.2	216.4	254.0	305.1	369.7	436.0
122.5°	150.5	151.8	155.8	161.5	171.6	191.0	220.6	256.0	303.5	363.3	426.6
125°	160.3	162.1	165.0	170.6	180.5	199.5	227.2	260.4	302.7	355.1	413.0
127.5°	170.0	171.4	174.9	181.4	191.7	209.9	235.1	264.2	300.1	344.9	396.1
130°	174.5	176.3	180.2	187.9	197.8	215.9	239.6	265.9	298.6	338.4	385.3
132.5°	180.0	181.4	186.6	194.0	204.7	221.4	243.9	268.8	297.9	333.2	375.9
135°	186.3	188.5	193.9	203.0	214.3	229.5	249.6	271.3	295.7	323.8	360.3
137.5°	194.2	196.0	201.5	209.9	221.2	235.0	252.7	271.9	292.6	316.8	347.3
140°	199.8	201.0	206.7	215.5	226.4	239.3	255.8	273.3	291.9	312.7	340.2
142.5°	204.6	206.1	211.6	220.2	231.0	243.4	258.8	274.6	291.8	310.3	334.7
145°	212.8	214.1	219.1	226.3	236.2	247.9	261.8	276.4	292.0	308.6	327.8
147.5°	222.3	222.6	227.0	234.4	242.5	253.1	266.2	278.8	292.5	306.7	322.2
150°	228.4	228.6	232.6	238.7	246.4	256.5	268.3	280.1	292.5	305.4	318.9
152.5°	232.8	232.8	237.0	243.0	250.2	259.5	270.0	281.0	291.6	303.2	315.4
155°	240.3	240.9	244.1	249.5	255.4	263.4	272.6	281.7	290.3	300.0	310.2
157.5°	248.0	248.0	251.0	255.1	260.3	266.6	274.5	281.7	289.0	296.7	305.0
160°	252.7	252.7	254.9	258.6	262.9	268.8	275.3	281.7	287.7	294.1	301.1
162.5°	257.0	256.6	258.3	261.6	265.5	270.1	276.2	281.7	286.3	291.5	297.7
165°	261.8	261.8	262.9	265.6	268.3	271.5	276.4	280.7	283.9	287.7	292.0
167.5°	266.6	266.2	266.6	268.7	270.2	272.7	276.3	279.4	281.3	283.8	286.8
170°	268.8	268.3	268.8	270.4	271.5	273.1	275.8	278.5	279.6	281.2	283.3
172.5°	271.0	270.4	270.5	271.7	272.4	273.5	275.4	277.7	277.9	278.6	280.3
175°	273.1	272.6	272.6	273.1	273.7	273.7	274.8	276.4	275.8	275.8	276.9
177.5°	274.1	273.7	273.2	273.7	273.7	273.7	274.1	274.9	274.1	274.1	274.6
180°	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1
2.5°	1339.4	1341.2	1343.1	1343.9	1343.6	1343.3	1343.1	1342.8
5°	1335.9	1338.5	1341.1	1342.4	1342.0	1341.7	1341.3	1341.0
7.5°	1328.7	1331.7	1334.7	1336.1	1335.7	1335.4	1335.0	1334.7
10°	1321.4	1324.5	1327.5	1328.8	1328.5	1328.1	1327.8	1327.5
12.5°	1311.3	1314.0	1316.7	1318.1	1318.1	1318.0	1317.9	1317.9
15°	1292.9	1295.9	1298.8	1300.2	1299.9	1299.6	1299.2	1298.8
17.5°	1270.5	1273.5	1276.6	1278.0	1277.7	1277.4	1277.1	1276.9
20°	1252.9	1256.2	1259.6	1261.2	1261.2	1261.2	1261.2	1261.2
22.5°	1232.4	1235.8	1239.1	1241.0	1241.6	1242.1	1242.6	1243.2
25°	1200.9	1204.6	1208.2	1210.2	1210.6	1210.9	1211.3	1211.5
27.5°	1165.5	1168.8	1172.2	1174.1	1174.6	1175.0	1175.4	1175.7
30°	1140.7	1144.3	1148.0	1150.2	1150.8	1151.5	1152.2	1152.9
32.5°	1115.2	1119.5	1123.7	1126.1	1126.8	1127.5	1128.1	1128.8
35°	1075.0	1079.6	1084.3	1087.1	1088.2	1089.2	1090.1	1091.2
37.5°	1032.9	1037.6	1042.5	1045.4	1046.4	1047.4	1048.6	1049.6
40°	1003.3	1008.4	1013.4	1016.6	1017.9	1019.3	1020.6	1021.9
42.5°	974.3	979.9	985.4	988.7	989.9	990.9	991.9	993.1
45°	929.4	935.2	940.8	944.5	946.2	947.8	949.5	951.2
47.5°	882.0	887.9	893.8	897.7	899.8	901.7	903.7	905.8
50°	848.7	855.4	862.0	866.4	868.5	870.4	872.4	874.4
52.5°	815.0	821.7	828.3	832.7	834.7	836.7	838.7	840.7
55°	764.4	771.1	777.8	782.1	784.1	786.2	788.2	790.1
57.5°	711.2	719.3	727.2	732.1	734.0	735.8	737.7	739.6
60°	674.6	682.3	689.9	695.1	697.9	700.5	703.2	705.9
62.5°	638.5	646.2	653.8	659.0	661.8	664.4	667.0	669.8
65°	582.6	591.0	599.4	604.8	607.6	610.2	612.9	615.6
67.5°	527.8	536.3	544.8	550.4	553.0	555.5	558.2	560.8
70°	489.2	498.1	507.2	512.9	515.2	517.6	519.9	522.3
72.5°	452.5	461.3	470.0	475.7	478.3	480.9	483.5	486.2
75°	396.5	405.9	415.2	421.4	424.4	427.4	430.5	433.5
77.5°	344.4	353.9	363.4	369.8	373.0	376.2	379.4	382.6
80°	310.6	320.6	330.6	337.0	339.6	342.3	345.0	347.7
82.5°	277.4	287.7	297.9	304.6	307.6	310.5	313.4	316.3
85°	230.7	240.8	250.8	257.5	260.9	264.2	267.6	270.9
87.5°	193.2	203.0	212.8	219.1	222.2	225.3	228.1	231.0
90°	178.0	188.3	198.6	204.7	207.9	211.1	213.3	215.9
92.5°	266.3	249.6	242.7	238.0	234.4	234.1	235.0	237.6
95°	547.4	473.1	410.1	363.9	340.6	327.0	320.3	316.3
97.5°	727.7	705.6	661.8	611.4	575.7	546.2	533.0	524.6
100°	780.9	800.7	783.3	749.2	704.8	674.4	660.5	658.6
102.5°	771.3	833.4	849.8	839.0	812.8	791.6	777.3	776.5
105°	718.2	819.6	881.2	908.8	912.6	910.9	906.1	905.5
107.5°	647.8	755.2	838.3	891.6	920.6	935.2	943.0	946.8
110°	605.0	705.7	791.4	855.6	896.5	921.8	934.2	941.6



TEST NUMBER: P332684-830

CATALOG NUMBER: S124DIP-S1195D590U830-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	571.3	661.0	742.1	806.3	852.3	882.3	898.5	909.1
115°	535.0	608.4	678.7	735.2	780.0	814.5	834.2	840.7
117.5°	511.8	573.4	629.9	678.4	717.4	747.2	767.2	773.3
120°	499.2	555.9	605.6	648.5	681.7	708.1	724.7	733.4
122.5°	488.0	543.0	588.8	626.8	655.2	677.8	692.0	700.3
125°	471.0	523.6	567.0	600.8	624.3	642.0	654.1	659.4
127.5°	450.5	500.8	543.8	576.0	599.9	616.0	626.9	632.4
130°	435.9	484.5	527.0	559.5	583.5	599.0	609.6	614.8
132.5°	421.5	467.2	508.7	541.0	564.7	581.8	592.0	597.2
135°	399.5	439.9	478.0	508.6	532.1	549.1	559.8	565.0
137.5°	380.4	414.8	447.3	474.9	496.7	513.2	522.0	527.5
140°	369.3	398.9	427.4	453.0	473.5	487.0	496.2	502.2
142.5°	359.8	385.9	410.4	432.5	450.6	463.0	471.1	475.5
145°	347.0	367.3	385.5	402.2	417.0	427.4	434.1	438.2
147.5°	336.6	351.4	364.6	377.0	388.0	396.9	402.1	404.1
150°	331.8	344.1	354.9	364.6	373.2	380.1	383.3	383.9
152.5°	327.0	337.6	347.5	355.5	362.8	368.5	370.4	371.0
155°	319.9	328.5	336.6	343.0	348.5	352.7	354.3	354.3
157.5°	312.3	319.5	326.2	331.4	335.5	338.7	339.7	339.7
160°	307.6	313.5	319.3	323.7	326.9	330.2	330.6	330.6
162.5°	302.8	307.8	312.5	316.4	318.8	322.0	322.5	322.1
165°	296.2	299.4	303.2	305.9	308.1	310.2	309.7	309.2
167.5°	289.9	292.4	295.4	297.0	298.1	299.4	299.4	299.0
170°	286.1	287.7	289.8	291.4	292.5	293.0	292.5	292.5
172.5°	282.6	283.8	285.1	286.3	286.9	287.5	286.9	286.1
175°	278.0	278.5	279.6	279.6	279.6	280.7	279.6	278.5
177.5°	274.9	275.4	275.4	275.8	275.4	275.8	274.9	274.1
180°	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7

(END OF REPORT)