

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: P332633-930

Luminaire Tested: **S124DIP-S1020D365U930-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332633-930
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-S1020D365U930-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

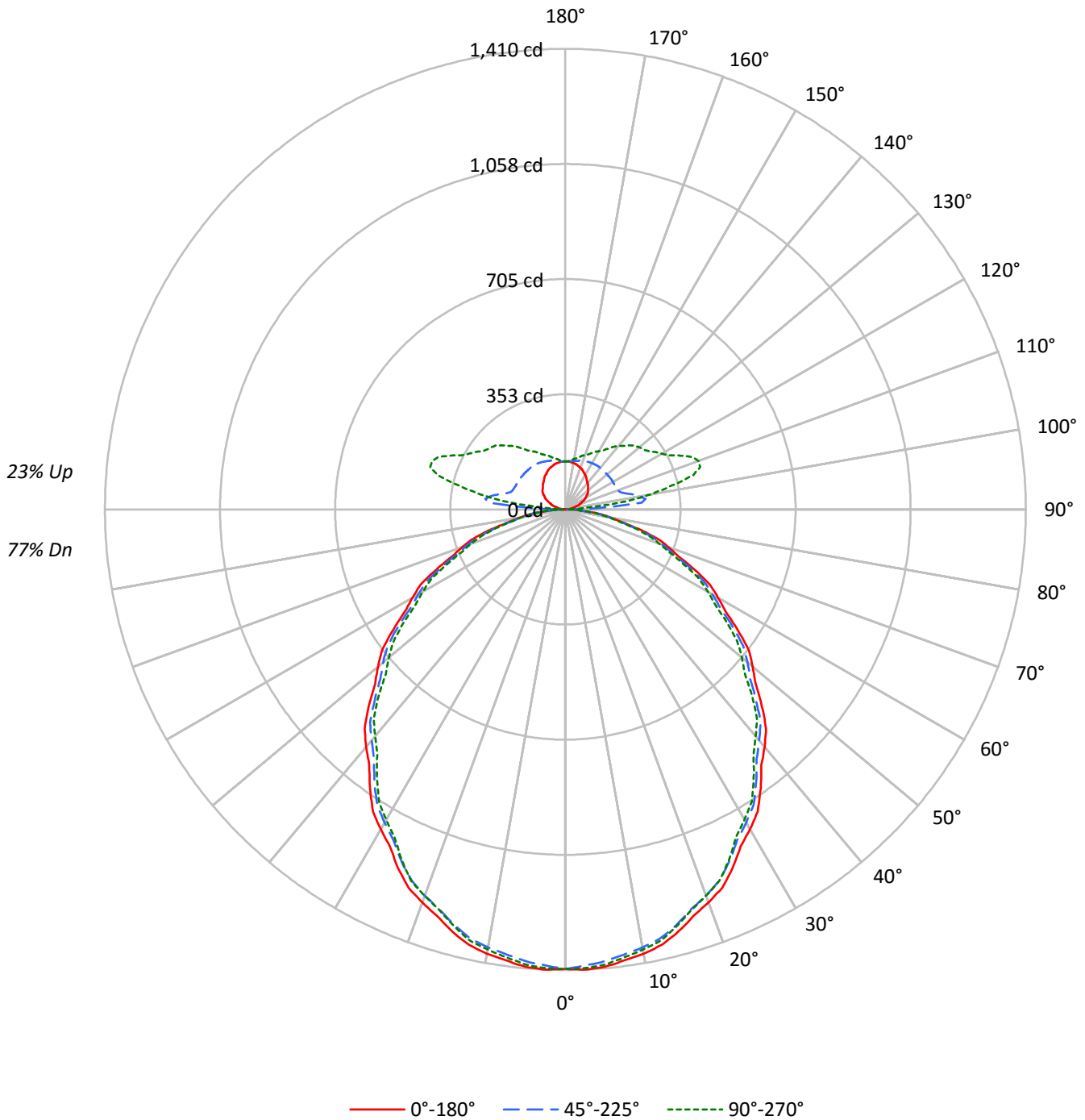
Lumens per Lamp: N/A
Luminaire Lumens: 4677.5 lumens
Efficiency: N/A
Efficacy: 107.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 43.5
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: P332633-930
CATALOG NUMBER: S124DIP-S1020D365U930-4F0-1E-UDD-F4

Luminous Intensity Polar Plot





TEST NUMBER: P332633-930

CATALOG NUMBER: S124DIP-S1020D365U930-4F0-1E-UDD-F4

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	114	114	114	114	108	108	108	108	98	98	98	89	89	89	81	81	81	77
1	104	99	95	92	99	95	91	88	86	84	81	79	77	75	72	70	68	65
2	95	87	80	75	90	83	77	72	76	71	67	69	65	62	63	60	58	54
3	86	76	69	62	82	73	66	60	67	61	56	61	57	53	56	52	49	46
4	79	68	59	53	75	65	57	51	60	53	48	55	49	45	50	46	42	39
5	73	60	52	46	69	58	50	44	53	47	42	49	44	39	45	41	37	34
6	67	54	46	40	64	52	44	39	48	42	37	44	39	35	41	36	33	30
7	62	49	41	35	59	47	40	34	44	37	32	41	35	31	37	33	29	27
8	58	45	37	31	55	43	36	30	40	34	29	37	32	27	34	30	26	24
9	54	41	33	28	51	40	32	27	37	31	26	34	29	25	32	27	24	22
10	51	38	30	25	48	37	30	25	34	28	24	32	26	23	30	25	21	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11357	11357	11357
5°	11391	11255	11336
10°	11320	11163	11218
15°	11183	11004	11032
20°	11001	10808	10817
25°	10794	10583	10553
30°	10540	10318	10224
35°	10276	10042	9909
40°	10003	9729	9551
45°	9717	9421	9240
50°	9401	9146	8862
55°	9060	8790	8504
60°	8719	8391	8136
65°	8334	8010	7687
70°	7903	7504	7211
75°	7243	6890	6716
80°	6448	6183	6025
85°	5641	5428	5326



TEST NUMBER: P332633-930

CATALOG NUMBER: S124DIP-S1020D365U930-4F0-1E-UDD-F4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	132.5	2.8
10°-20°	373.3	8.0
20°-30°	549.4	11.7
30°-40°	638.7	13.7
40°-50°	638.7	13.7
50°-60°	558.7	11.9
60°-70°	414.9	8.9
70°-80°	235.7	5.0
80°-90°	68.8	1.5
90°-100°	105.9	2.3
100°-110°	220.5	4.7
110°-120°	197.5	4.2
120°-130°	166.1	3.6
130°-140°	138.5	3.0
140°-150°	105.8	2.3
150°-160°	74.4	1.6
160°-170°	43.7	0.9
170°-180°	14.2	0.3
0°-30°	1055.2	22.6
0°-40°	1693.9	36.2
0°-60°	2891.3	61.8
0°-90°	3610.9	77.2
90°-120°	523.9	11.2
90°-150°	934.3	20.0
90°-180°	1067.0	22.8
0°-180°	4677.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1407	1407	1407	1407	1407	
5°	1406	1401	1389	1400	1399	133
15°	1338	1333	1317	1323	1320	377
25°	1212	1204	1188	1189	1185	557
35°	1043	1034	1019	1011	1006	652
45°	851	843	825	813	809	656
55°	644	640	624	611	604	576
65°	436	430	419	408	402	432
75°	232	227	221	217	215	247
85°	61	61	59	59	58	67
90°	0	2	5	6	6	4
95°	10	30	235	116	70	11
105°	34	49	189	407	405	36
115°	59	74	169	324	389	59
125°	83	98	168	276	311	74
135°	98	117	166	245	278	76
145°	113	130	165	206	227	71
155°	129	139	161	182	190	59
165°	140	145	154	163	166	40
175°	146	147	148	150	149	14
180°	147	147	147	147	147	



TEST NUMBER: P332633-930
 CATALOG NUMBER: S124DIP-S1020D365U930-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8
2.5°	1410.4	1409.8	1409.2	1408.6	1408.0	1406.6	1404.4	1402.2	1400.0	1397.7	1399.8
5°	1405.7	1404.7	1403.7	1402.6	1401.7	1399.8	1397.0	1394.2	1391.6	1388.8	1391.6
7.5°	1392.6	1391.6	1390.6	1389.6	1388.6	1386.6	1383.5	1380.5	1377.4	1374.4	1376.6
10°	1380.9	1379.9	1378.8	1377.9	1376.9	1374.8	1371.5	1368.2	1365.0	1361.7	1363.7
12.5°	1365.5	1364.6	1363.5	1362.5	1361.5	1359.3	1355.8	1352.4	1348.9	1345.5	1347.7
15°	1338.1	1337.0	1336.0	1335.1	1334.0	1331.6	1327.9	1324.1	1320.4	1316.6	1318.1
17.5°	1304.9	1303.7	1302.4	1301.1	1299.9	1297.5	1293.9	1290.4	1286.8	1283.3	1284.2
20°	1280.5	1279.3	1278.1	1276.8	1275.5	1273.0	1269.3	1265.5	1261.8	1258.0	1258.7
22.5°	1254.4	1252.7	1251.1	1249.4	1247.8	1245.0	1241.3	1237.5	1233.8	1230.0	1231.4
25°	1211.8	1210.1	1208.3	1206.5	1204.8	1202.2	1198.7	1195.1	1191.6	1188.1	1188.4
27.5°	1163.1	1161.3	1159.4	1157.6	1155.8	1153.3	1150.1	1146.8	1143.5	1140.3	1139.7
30°	1130.7	1128.6	1126.6	1124.6	1122.6	1120.0	1116.7	1113.5	1110.2	1106.9	1106.0
32.5°	1096.3	1094.5	1092.7	1091.0	1089.2	1086.5	1083.0	1079.6	1076.1	1072.7	1071.5
35°	1042.7	1041.0	1039.2	1037.5	1035.7	1033.1	1029.6	1026.1	1022.5	1019.0	1017.2
37.5°	986.1	984.5	982.9	981.3	979.7	977.1	973.2	969.5	965.7	962.0	960.1
40°	949.2	947.1	945.1	943.1	941.1	938.2	934.5	930.7	927.0	923.2	920.7
42.5°	909.5	908.2	907.0	905.9	904.7	902.0	897.8	893.6	889.5	885.3	882.4
45°	851.1	849.3	847.6	845.8	844.1	841.1	837.1	833.2	829.2	825.2	822.4
47.5°	789.9	788.8	787.6	786.4	785.1	782.7	779.0	775.3	771.6	767.8	764.8
50°	748.5	747.5	746.5	745.5	744.4	742.2	738.7	735.2	731.7	728.2	724.7
52.5°	707.9	706.7	705.5	704.3	703.1	700.7	696.9	693.2	689.5	685.8	682.7
55°	643.7	642.9	642.1	641.4	640.7	638.5	635.0	631.5	628.0	624.5	621.5
57.5°	582.4	581.5	580.7	579.8	578.9	576.7	573.3	569.9	566.4	563.0	560.1
60°	540.0	538.7	537.4	536.2	534.9	532.7	529.5	526.2	522.9	519.7	517.4
62.5°	498.5	497.4	496.4	495.3	494.2	492.0	488.5	485.1	481.6	478.2	476.1
65°	436.3	435.0	433.7	432.5	431.2	429.3	426.8	424.4	421.8	419.3	416.9
67.5°	373.6	372.4	371.3	370.1	368.9	367.2	364.8	362.4	360.0	357.6	355.1
70°	334.8	333.0	331.3	329.5	327.8	325.9	323.9	321.9	319.9	317.9	315.8
72.5°	293.3	291.6	289.8	288.0	286.3	284.6	283.0	281.4	279.8	278.2	276.6
75°	232.2	231.0	229.7	228.4	227.2	225.9	224.7	223.5	222.2	220.9	220.0
77.5°	173.8	173.3	172.7	172.2	171.6	170.8	169.7	168.6	167.5	166.4	166.1
80°	138.7	137.9	137.1	136.4	135.7	135.0	134.5	134.0	133.5	133.0	132.5
82.5°	104.4	104.0	103.7	103.3	103.0	102.7	102.6	102.6	102.5	102.3	102.1
85°	60.9	60.9	60.9	60.9	60.9	60.7	60.1	59.6	59.1	58.6	58.6
87.5°	23.5	23.4	23.4	23.2	23.1	22.9	23.1	22.8	22.7	22.7	22.6
90°	0.3	0.9	1.7	2.0	2.3	2.3	4.0	4.0	4.6	5.2	4.9
92.5°	3.3	4.8	7.5	11.0	15.2	21.2	35.9	58.2	80.0	91.4	76.1
95°	9.5	10.4	13.3	17.0	23.9	36.0	61.1	108.4	177.2	234.8	241.5
97.5°	17.0	17.0	19.6	23.0	28.9	39.1	58.4	97.4	165.8	247.4	303.4
100°	21.9	21.9	23.9	27.4	32.9	42.1	59.1	91.6	150.4	231.7	305.4
102.5°	26.5	27.0	28.8	32.0	37.3	46.0	61.4	90.0	140.1	212.1	288.1
105°	33.8	34.6	36.0	39.5	44.7	53.0	66.9	90.7	131.1	189.0	256.7
107.5°	41.7	42.2	43.7	47.4	52.3	60.6	73.2	95.1	129.5	176.1	231.4
110°	47.0	47.5	49.0	52.4	57.6	65.4	78.1	98.2	130.0	171.7	218.7



TEST NUMBER: P332633-930

CATALOG NUMBER: S124DIP-S1020D365U930-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	52.0	52.6	54.3	57.5	62.7	70.4	82.7	101.7	131.3	169.7	211.6
115°	59.4	60.3	62.2	65.1	70.6	78.4	89.9	107.2	134.0	168.6	204.9
117.5°	66.9	67.8	69.5	72.7	77.9	85.9	96.9	112.8	136.8	168.3	201.9
120°	72.1	72.6	74.6	77.8	82.7	90.7	101.7	116.7	138.9	168.3	200.2
122.5°	76.6	77.2	79.2	82.2	87.6	95.4	106.3	120.4	141.0	168.0	198.4
125°	82.7	83.8	85.6	88.8	94.2	102.3	112.7	125.9	144.1	167.7	195.3
127.5°	88.1	88.9	91.1	94.7	100.4	108.5	118.5	130.7	146.6	167.1	191.3
130°	91.1	92.2	94.5	98.8	104.3	112.7	122.5	133.7	148.4	166.8	188.7
132.5°	94.1	95.0	98.0	102.1	108.0	115.9	125.7	136.7	150.0	166.6	186.5
135°	98.2	99.4	102.3	107.2	113.2	120.7	130.2	140.6	152.5	166.2	183.0
137.5°	102.5	103.5	106.7	111.4	117.6	124.8	133.7	143.4	153.8	166.2	180.0
140°	105.5	106.3	109.5	114.4	120.4	127.3	136.0	145.2	155.0	166.0	178.4
142.5°	108.7	109.6	112.5	117.2	122.9	129.6	138.1	146.6	156.0	166.0	177.0
145°	113.2	114.1	117.0	121.0	126.5	132.8	140.3	148.1	156.5	165.4	174.6
147.5°	118.4	118.6	121.2	125.3	129.9	135.6	142.6	149.4	156.8	164.4	172.5
150°	121.6	121.9	124.2	127.7	132.0	137.5	143.8	150.1	156.8	163.6	170.9
152.5°	124.6	124.7	126.9	130.2	134.0	139.1	144.7	150.6	156.3	162.5	169.0
155°	128.8	129.1	130.9	133.7	136.9	141.2	146.1	151.0	155.6	160.8	166.2
157.5°	132.9	132.9	134.5	136.7	139.5	142.9	147.1	151.0	154.8	159.0	163.5
160°	135.4	135.4	136.6	138.6	140.9	144.1	147.6	151.0	154.2	157.6	161.3
162.5°	137.7	137.5	138.4	140.2	142.3	144.8	148.0	151.0	153.4	156.2	159.6
165°	140.3	140.3	140.9	142.4	143.8	145.5	148.1	150.4	152.1	154.2	156.5
167.5°	142.9	142.6	142.9	144.0	144.8	146.2	148.1	149.7	150.7	152.1	153.7
170°	144.1	143.8	144.1	145.0	145.5	146.3	147.8	149.3	149.9	150.7	151.9
172.5°	145.2	145.0	145.0	145.6	145.9	146.6	147.6	148.8	149.0	149.3	150.3
175°	146.3	146.1	146.1	146.3	146.7	146.7	147.2	148.1	147.8	147.8	148.4
177.5°	146.9	146.7	146.4	146.7	146.7	146.7	146.9	147.3	146.9	146.9	147.2
180°	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7



TEST NUMBER: P332633-930

CATALOG NUMBER: S124DIP-S1020D365U930-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8
2.5°	1401.7	1403.8	1405.8	1406.7	1406.5	1406.3	1406.1	1405.9
5°	1394.2	1397.0	1399.8	1400.9	1400.4	1399.9	1399.4	1398.9
7.5°	1378.8	1381.0	1383.2	1384.1	1383.8	1383.5	1383.2	1382.9
10°	1365.7	1367.7	1369.7	1370.4	1369.9	1369.5	1369.0	1368.5
12.5°	1349.9	1352.1	1354.3	1355.0	1354.4	1353.6	1352.9	1352.3
15°	1319.6	1321.1	1322.7	1323.0	1322.3	1321.5	1320.8	1320.0
17.5°	1285.2	1286.1	1287.0	1287.3	1286.8	1286.3	1285.8	1285.2
20°	1259.5	1260.3	1261.0	1261.1	1260.6	1260.1	1259.6	1259.1
22.5°	1232.7	1234.1	1235.4	1235.7	1234.8	1233.9	1233.0	1232.1
25°	1188.6	1188.9	1189.1	1188.7	1187.7	1186.7	1185.7	1184.7
27.5°	1139.1	1138.5	1137.9	1137.0	1135.7	1134.5	1133.2	1132.0
30°	1105.0	1103.9	1102.9	1101.8	1100.6	1099.3	1098.0	1096.8
32.5°	1070.2	1069.1	1067.9	1066.7	1065.4	1064.1	1062.9	1061.6
35°	1015.5	1013.7	1012.0	1010.5	1009.3	1008.0	1006.7	1005.5
37.5°	958.1	956.3	954.4	952.6	951.0	949.3	947.6	946.0
40°	918.2	915.7	913.2	911.3	910.0	908.8	907.6	906.3
42.5°	879.5	876.6	873.7	871.8	871.0	870.1	869.3	868.5
45°	819.6	816.8	814.1	812.4	811.6	810.9	810.1	809.3
47.5°	761.7	758.6	755.5	752.9	751.1	749.1	747.2	745.3
50°	721.2	717.7	714.2	711.7	710.1	708.7	707.2	705.6
52.5°	679.6	676.5	673.4	670.9	669.0	667.1	665.2	663.2
55°	618.5	615.5	612.5	610.3	608.7	607.2	605.7	604.2
57.5°	557.3	554.4	551.5	549.3	547.9	546.5	545.0	543.6
60°	515.2	512.9	510.6	508.9	507.6	506.4	505.2	503.9
62.5°	474.1	472.0	469.9	468.3	467.1	465.8	464.6	463.3
65°	414.3	411.8	409.3	407.4	406.2	405.0	403.7	402.4
67.5°	352.8	350.3	348.0	346.6	346.2	345.8	345.5	345.2
70°	313.9	311.9	309.9	308.5	307.8	307.0	306.2	305.5
72.5°	275.0	273.4	271.8	270.6	269.9	269.1	268.4	267.6
75°	218.9	217.9	217.0	216.3	216.1	215.8	215.6	215.3
77.5°	165.8	165.5	165.2	164.7	164.0	163.4	162.7	162.1
80°	132.0	131.5	131.0	130.6	130.4	130.1	129.9	129.6
82.5°	101.7	101.4	101.2	100.9	100.6	100.4	100.1	99.9
85°	58.6	58.6	58.6	58.5	58.2	58.0	57.7	57.5
87.5°	22.7	22.7	22.8	22.8	22.8	22.9	22.8	22.8
90°	5.2	5.5	5.8	5.8	6.0	6.4	6.0	6.0
92.5°	56.6	42.6	33.9	28.1	24.7	23.2	22.2	22.2
95°	213.5	168.8	130.2	102.3	88.1	79.2	74.0	70.3
97.5°	315.4	298.9	270.7	240.6	219.9	202.6	194.0	187.9
100°	347.5	353.3	339.2	317.8	292.8	275.2	266.5	264.2
102.5°	345.9	374.5	378.5	369.7	354.3	341.6	332.5	330.6
105°	322.7	372.6	401.1	412.9	413.5	411.2	407.2	405.4
107.5°	289.8	342.9	383.0	408.8	423.0	429.6	432.4	433.2
110°	270.0	319.8	361.7	393.3	413.8	425.9	431.0	433.7



TEST NUMBER: P332633-930

CATALOG NUMBER: S124DIP-S1020D365U930-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	255.4	299.5	339.0	370.7	394.0	408.6	415.9	420.0
115°	240.9	276.3	310.1	337.7	360.4	377.7	387.0	389.3
117.5°	233.7	263.1	289.6	313.1	332.5	347.0	356.3	358.1
120°	230.5	257.3	280.4	300.8	317.2	330.0	337.5	340.6
122.5°	227.7	253.6	274.6	292.5	306.4	317.2	323.6	326.8
125°	223.1	247.8	267.7	283.6	295.1	303.5	308.9	310.6
127.5°	217.3	240.9	260.8	275.8	287.4	294.8	299.5	301.2
130°	212.6	235.5	255.0	270.3	282.1	289.3	293.9	295.6
132.5°	207.8	229.2	248.3	263.6	275.2	283.3	287.7	289.4
135°	201.1	219.9	237.4	251.8	263.3	271.4	276.1	277.8
137.5°	195.1	210.9	225.8	238.7	249.6	257.5	261.3	263.3
140°	191.6	205.1	218.1	230.2	240.4	246.6	250.7	253.0
142.5°	188.4	200.3	211.4	221.9	230.9	236.8	240.4	241.9
145°	183.8	193.6	202.3	210.3	217.5	222.4	225.3	226.7
147.5°	180.1	187.8	194.8	201.1	206.4	210.7	212.8	213.4
150°	177.8	184.4	190.2	195.3	200.0	203.7	205.5	205.7
152.5°	175.3	181.0	186.3	190.5	194.4	197.5	198.5	198.9
155°	171.5	176.0	180.3	183.8	186.7	189.0	189.9	189.9
157.5°	167.4	171.2	174.9	177.7	179.8	181.6	182.1	182.1
160°	164.9	168.0	171.1	173.5	175.2	176.9	177.2	177.2
162.5°	162.3	165.0	167.5	169.6	170.8	172.5	172.8	172.6
165°	158.7	160.5	162.5	164.0	165.1	166.2	166.0	165.7
167.5°	155.4	156.7	158.3	159.1	159.7	160.5	160.5	160.2
170°	153.3	154.2	155.3	156.2	156.8	157.0	156.8	156.8
172.5°	151.5	152.1	152.8	153.4	153.8	154.0	153.8	153.3
175°	149.0	149.3	149.9	149.9	149.9	150.4	149.9	149.3
177.5°	147.3	147.6	147.6	147.8	147.6	147.8	147.3	146.9
180°	146.7	146.7	146.7	146.7	146.7	146.7	146.7	146.7

(END OF REPORT)