

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: P242114

Luminaire Tested: **S121DR-S685D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242114
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-18)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S121DR-S685D927-X4F0-XX-UDD-A-W
Description: DEFINE 1 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2268.4 lumens
Efficiency: N/A
Efficacy: 86.3 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.22 / 1.37
Luminous Opening: Rectangular (W 3.88' x L: 0.09' x H: 0')
CIE Type: Direct

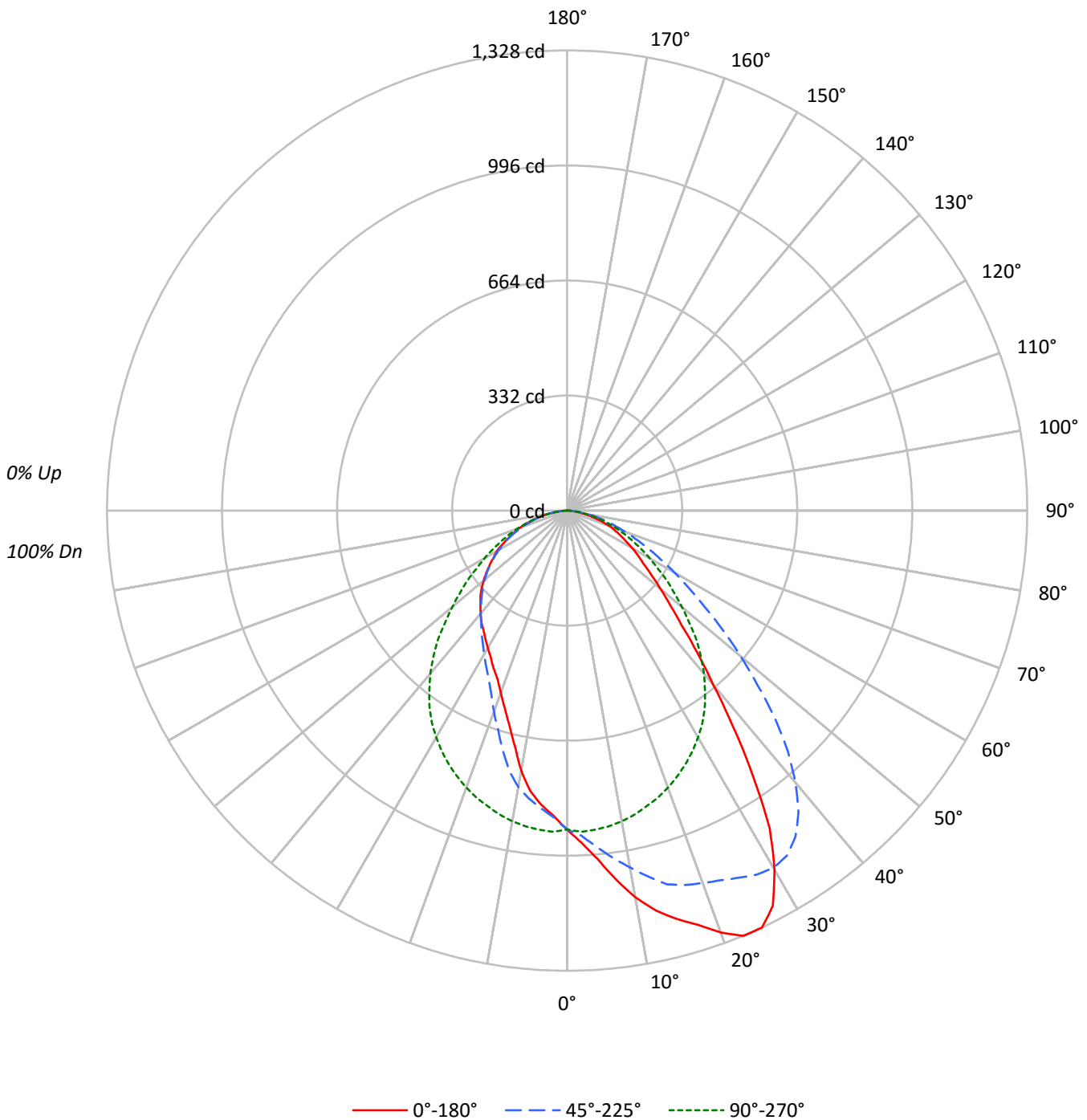
Input Watts (W): 26.3
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P242114

CATALOG NUMBER: S121DR-S685D927-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





TEST NUMBER: P242114

CATALOG NUMBER: S121DR-S685D927-X4F0-XX-UDD-A-W

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	102	98	107	103	100	96	99	96	93	95	93	91	92	90	88	86
2	101	93	87	82	98	91	85	81	88	83	79	85	80	77	82	78	75	73
3	92	83	75	69	90	81	74	68	78	72	67	75	70	66	73	69	65	63
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57	54
5	79	66	58	52	77	65	57	51	63	56	51	61	55	50	60	54	50	48
6	73	60	52	46	71	59	51	45	57	50	45	56	49	45	54	49	44	42
7	68	55	46	41	66	54	46	40	52	45	40	51	45	40	50	44	40	38
8	63	50	42	36	62	50	42	36	48	41	36	47	41	36	46	40	36	34
9	59	46	38	33	58	46	38	33	44	38	33	43	37	33	42	37	32	31
10	56	43	35	30	54	42	35	30	41	34	30	40	34	30	39	34	30	28

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	27274	27274	27274
5°	30019	27497	25353
10°	34085	27397	22929
15°	37423	27095	19709
20°	40842	26827	17635
25°	43432	26406	16422
30°	40953	25859	15666
35°	33842	25045	15217
40°	25369	23749	15015
45°	19552	22141	14838
50°	16212	19918	14497
55°	13994	18091	14077
60°	12865	16314	13896
65°	11884	14744	13111
70°	11253	13246	12562
75°	9250	11700	11150
80°	7303	9538	9197
85°	5643	7003	6187



TEST NUMBER: P242114

CATALOG NUMBER: S121DR-S685D927-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	88.5	3.9
10°-20°	258.2	11.4
20°-30°	395.4	17.4
30°-40°	451.1	19.9
40°-50°	404.8	17.8
50°-60°	317.5	14.0
60°-70°	216.0	9.5
70°-80°	111.3	4.9
80°-90°	25.6	1.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	742.1	32.7
0°-40°	1193.2	52.6
0°-60°	1915.5	84.4
0°-90°	2268.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2268.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	920	920	920	920	920	
5°	1009	974	924	863	852	100
15°	1220	1117	883	717	642	347
25°	1328	1169	808	536	502	599
35°	936	1149	692	430	421	580
45°	467	848	528	348	354	370
55°	271	484	350	269	272	247
65°	170	258	210	184	187	169
75°	81	113	102	94	97	87
85°	17	22	21	19	18	20
90°	0	0	0	0	0	



TEST NUMBER: P242114

CATALOG NUMBER: S121DR-S685D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	920.5	920.5	920.5	920.5	920.5	920.5	920.5	920.5	920.5	920.5	920.5
2.5°	959.4	959.4	960.9	960.6	959.0	956.2	953.8	951.0	943.9	939.2	943.5
5°	1009.3	1011.3	1013.2	1012.8	1006.9	1001.7	994.2	992.2	979.6	973.6	971.6
7.5°	1072.6	1072.3	1073.0	1066.3	1061.2	1056.0	1046.1	1033.8	1018.8	1010.5	1002.5
10°	1132.9	1136.4	1134.8	1126.5	1118.6	1113.1	1097.2	1082.2	1063.5	1045.7	1035.8
12.5°	1182.0	1180.0	1186.7	1178.8	1169.3	1159.0	1143.6	1130.1	1105.9	1081.8	1061.6
15°	1220.0	1218.0	1218.8	1212.9	1203.0	1193.9	1178.0	1163.8	1140.8	1116.6	1095.2
17.5°	1253.3	1255.3	1251.7	1244.6	1231.1	1220.4	1200.6	1181.2	1157.0	1132.9	1111.9
20°	1295.3	1297.2	1290.5	1280.2	1267.1	1248.9	1228.3	1200.6	1173.7	1143.9	1117.8
22.5°	1328.5	1327.3	1325.0	1315.1	1301.2	1284.2	1254.5	1224.0	1191.9	1155.0	1121.4
25°	1328.5	1330.1	1331.3	1326.2	1317.0	1302.8	1282.6	1250.5	1214.5	1169.3	1122.2
27.5°	1285.8	1292.9	1298.0	1298.0	1296.1	1295.7	1283.8	1263.6	1229.9	1184.3	1132.1
30°	1197.0	1206.5	1214.5	1226.7	1241.4	1250.9	1254.5	1246.5	1229.1	1190.7	1136.4
32.5°	1087.7	1086.9	1103.1	1123.0	1151.9	1172.1	1192.3	1204.2	1203.4	1180.4	1135.2
35°	935.6	946.7	966.1	993.8	1031.1	1064.3	1108.3	1131.3	1149.5	1148.7	1119.8
37.5°	787.5	789.0	810.8	848.8	881.7	933.2	990.7	1038.6	1082.6	1096.8	1087.3
40°	655.9	667.0	681.7	713.4	746.3	791.4	864.3	928.5	982.7	1024.7	1036.2
42.5°	554.5	560.5	574.7	602.5	631.8	685.7	739.1	807.7	876.2	943.1	977.6
45°	466.6	472.2	485.2	504.6	532.0	574.3	629.4	696.0	769.2	847.7	896.8
47.5°	402.4	404.4	414.3	429.0	454.7	485.6	530.0	594.6	668.6	745.1	817.2
50°	351.7	354.9	361.6	373.1	392.1	421.1	456.3	505.0	573.6	652.8	726.1
52.5°	307.4	309.8	317.7	324.0	338.7	363.2	393.7	438.1	495.9	567.2	642.9
55°	270.9	273.3	277.3	284.4	295.9	312.5	338.7	373.9	423.4	483.6	554.5
57.5°	243.2	244.4	245.2	249.9	259.1	272.5	294.7	322.4	360.9	415.9	478.9
60°	217.1	216.7	219.8	223.4	228.9	237.3	253.5	278.5	312.9	357.7	416.3
62.5°	190.9	192.9	194.9	197.7	201.2	206.0	219.0	237.7	265.0	303.4	351.7
65°	169.5	169.9	171.5	171.9	176.3	181.0	190.9	203.6	226.2	257.5	297.5
67.5°	148.9	149.3	148.9	150.1	152.1	156.1	161.2	171.5	188.9	214.3	249.1
70°	129.9	128.7	127.1	129.1	131.1	133.1	136.7	144.6	157.6	176.7	205.6
72.5°	104.6	105.4	106.2	106.9	107.3	110.1	113.3	118.8	129.1	143.8	166.0
75°	80.8	80.8	82.0	82.8	86.4	87.1	90.7	94.7	103.0	113.3	130.7
77.5°	59.4	59.0	61.0	61.4	63.4	65.8	67.7	71.7	78.0	86.7	98.2
80°	42.8	43.2	42.8	42.8	44.0	45.6	48.3	50.3	54.7	60.2	68.5
82.5°	28.5	28.5	28.9	28.9	30.1	30.1	31.7	33.3	36.0	39.6	45.6
85°	16.6	16.6	16.2	16.2	16.6	16.6	18.2	19.4	19.8	22.2	24.2
87.5°	7.1	7.1	6.7	7.1	6.7	7.1	6.7	7.5	7.9	8.3	9.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P242114

CATALOG NUMBER: S121DR-S685D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	920.5	920.5	920.5	920.5	920.5	920.5	920.5	920.5	920.5	920.5	920.5
2.5°	942.3	941.1	940.7	936.4	932.0	926.9	926.1	927.7	920.9	912.6	912.2
5°	966.9	962.5	956.2	947.9	940.7	931.2	926.5	924.5	914.2	902.3	899.9
7.5°	994.2	983.5	972.0	959.4	946.7	932.8	924.1	919.0	904.7	890.0	884.1
10°	1020.4	1006.5	989.1	969.7	951.8	932.8	919.8	910.6	893.2	875.0	865.9
12.5°	1050.5	1027.5	1002.9	978.8	957.0	932.4	912.6	898.8	878.6	859.1	845.7
15°	1072.3	1039.0	1020.0	985.5	958.2	928.5	904.3	883.3	861.1	839.7	826.3
17.5°	1089.3	1063.1	1029.9	991.8	955.0	922.9	892.8	869.4	840.1	816.8	802.1
20°	1094.8	1068.3	1034.2	992.6	955.8	914.6	879.0	850.8	819.5	791.0	770.8
22.5°	1092.8	1062.7	1027.9	987.1	949.9	901.1	863.9	830.2	795.4	764.9	737.1
25°	1088.5	1053.6	1015.2	976.8	935.2	887.3	844.5	807.7	765.7	732.4	699.1
27.5°	1086.1	1040.6	997.4	955.8	916.2	869.8	823.9	782.7	736.4	696.0	653.2
30°	1085.3	1031.1	976.8	928.5	892.0	844.9	799.3	755.8	701.5	655.9	612.4
32.5°	1083.7	1023.1	959.4	901.5	859.9	817.6	769.2	726.1	664.7	617.1	570.4
35°	1073.0	1009.3	939.2	873.4	824.7	780.7	737.5	692.4	628.6	577.5	532.8
37.5°	1050.1	994.2	919.4	845.3	787.1	742.3	702.3	653.2	591.4	535.5	493.9
40°	1016.0	970.5	898.0	817.6	749.0	699.9	657.5	614.0	550.2	496.7	459.1
42.5°	971.6	936.4	868.3	785.1	712.2	657.1	614.0	570.8	512.2	460.7	427.0
45°	913.4	891.6	831.8	749.8	676.5	612.8	566.0	528.4	474.1	427.0	396.1
47.5°	848.8	839.3	789.4	710.6	633.4	571.6	516.9	477.3	434.9	394.9	367.6
50°	770.8	778.3	739.1	666.6	591.8	528.4	474.9	432.1	395.3	364.4	340.3
52.5°	697.9	715.8	684.1	615.1	548.2	482.5	428.6	389.4	360.5	335.1	314.1
55°	616.7	642.5	623.5	564.1	497.5	439.3	385.4	350.2	325.2	305.8	288.0
57.5°	538.7	575.1	561.3	507.8	451.2	394.5	343.8	309.0	291.1	276.9	261.8
60°	469.4	502.7	500.7	455.1	398.5	348.2	306.6	275.3	259.4	249.9	236.9
62.5°	407.2	440.9	437.7	396.5	351.7	305.0	269.7	241.2	229.7	219.4	211.1
65°	343.8	372.7	374.3	343.8	300.6	263.0	232.9	210.3	200.0	193.7	187.8
67.5°	286.4	314.5	317.3	293.1	255.1	222.6	200.0	181.0	171.9	166.4	162.0
70°	236.1	259.1	264.2	244.0	211.9	186.6	167.6	152.9	147.0	141.4	139.8
72.5°	191.3	209.9	213.5	194.9	171.1	152.1	137.4	126.4	122.0	116.5	115.3
75°	152.1	165.2	165.6	153.3	135.5	120.8	108.9	102.2	97.4	93.5	92.7
77.5°	110.5	122.0	125.6	116.5	101.8	89.5	82.8	77.6	74.5	72.5	72.1
80°	80.0	87.5	89.1	81.2	72.5	65.0	60.2	55.9	53.9	51.9	51.1
82.5°	49.9	56.6	57.0	51.5	47.1	42.0	38.0	36.4	35.3	34.1	34.1
85°	26.9	30.5	30.1	27.7	25.7	23.0	21.4	20.6	19.8	19.0	19.0
87.5°	10.3	11.5	11.5	11.9	10.3	9.1	8.3	8.7	8.3	8.3	8.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P242114

CATALOG NUMBER: S121DR-S685D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	920.5	920.5	920.5	920.5	920.5	920.5	920.5	920.5	920.5	920.5	920.5
2.5°	909.5	907.9	903.9	897.6	894.0	886.1	886.5	888.1	888.5	887.3	886.9
5°	893.2	888.5	882.1	874.2	868.7	862.7	858.8	861.1	859.9	859.5	857.6
7.5°	875.4	869.1	861.1	853.2	846.9	838.9	835.8	833.0	829.8	829.4	827.9
10°	857.6	849.6	840.5	829.0	820.3	810.4	800.9	795.8	789.8	785.5	776.4
12.5°	836.6	823.1	812.8	800.9	785.1	769.2	758.5	743.9	736.0	728.0	717.3
15°	812.4	795.0	777.2	753.4	739.5	717.3	701.5	690.8	678.5	670.6	661.5
17.5°	777.9	759.7	737.1	710.2	685.7	663.1	651.6	637.7	632.6	615.1	613.6
20°	743.9	716.6	688.4	661.1	633.8	617.5	602.9	593.8	584.3	573.2	569.6
22.5°	705.5	669.8	640.1	614.8	589.8	572.0	564.8	554.5	545.4	539.1	533.2
25°	658.7	625.8	595.7	572.0	549.4	535.9	526.8	519.3	515.3	508.2	505.8
27.5°	615.5	582.7	558.5	536.3	518.1	506.2	498.3	491.6	486.4	485.2	482.5
30°	571.6	543.5	520.5	501.5	485.2	478.9	471.4	468.2	465.0	463.4	460.3
32.5°	532.0	507.0	486.8	468.6	459.1	453.1	449.2	446.0	443.6	442.8	442.1
35°	495.9	472.9	456.3	443.2	436.1	429.8	427.8	425.0	423.8	423.4	423.0
37.5°	464.2	442.8	430.2	418.7	413.5	407.6	408.0	406.8	406.0	403.6	405.2
40°	432.1	415.5	402.4	393.3	389.8	387.8	387.0	386.2	386.6	386.6	386.2
42.5°	402.8	388.2	379.9	371.1	369.6	368.0	368.0	366.8	367.2	369.2	370.0
45°	376.3	364.8	357.3	350.2	350.2	348.2	349.8	349.4	350.6	351.7	352.5
47.5°	349.8	339.5	333.9	330.4	328.8	328.8	330.0	331.9	332.7	333.1	333.9
50°	323.2	315.7	310.9	309.0	308.6	310.5	311.7	311.3	312.5	314.1	315.3
52.5°	299.9	293.1	289.9	289.2	289.2	290.7	291.1	292.3	293.1	293.1	294.7
55°	275.7	270.9	268.6	268.2	268.6	269.4	270.9	271.7	271.3	272.1	272.1
57.5°	251.5	248.0	246.8	248.0	248.0	249.5	249.5	249.5	249.1	250.7	250.3
60°	228.9	225.0	226.2	225.8	227.0	227.0	228.2	228.2	227.0	228.6	229.3
62.5°	206.4	205.6	204.0	204.0	205.2	205.6	204.4	205.6	206.0	207.2	208.0
65°	182.6	179.8	181.0	180.6	181.8	183.8	182.2	182.2	183.4	185.0	185.8
67.5°	160.0	157.6	158.8	159.2	159.2	160.0	158.8	159.6	161.2	163.2	164.4
70°	137.1	136.3	136.7	136.3	136.3	138.2	138.6	138.2	139.8	141.8	142.2
72.5°	113.7	114.5	113.7	114.5	115.3	114.1	114.5	115.7	117.2	118.4	120.4
75°	92.3	91.1	91.5	93.5	93.1	93.9	93.5	94.7	97.4	96.6	97.0
77.5°	71.3	70.9	71.3	71.7	72.1	73.3	72.9	74.9	75.3	75.7	76.4
80°	50.7	51.1	51.5	52.3	53.5	53.1	53.9	54.3	55.9	54.3	55.5
82.5°	34.5	34.1	34.9	34.9	36.0	36.8	35.6	35.6	35.6	35.3	35.3
85°	19.0	20.2	20.2	20.2	19.4	19.4	19.8	19.4	19.4	19.4	19.0
87.5°	8.3	8.3	7.9	7.5	7.9	7.5	7.5	7.1	6.7	6.7	6.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P242114

CATALOG NUMBER: S121DR-S685D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	920.5	920.5	920.5	920.5
2.5°	884.5	886.5	884.1	882.5
5°	855.6	855.6	853.2	852.4
7.5°	823.1	823.5	819.1	816.0
10°	774.4	772.0	765.7	762.1
12.5°	709.4	713.0	703.5	696.3
15°	652.8	642.9	646.8	642.5
17.5°	605.2	602.1	597.7	598.1
20°	563.7	561.3	558.9	559.3
22.5°	530.8	528.8	528.0	525.2
25°	503.4	504.2	502.3	502.3
27.5°	480.9	479.7	478.5	476.9
30°	459.5	459.9	458.7	457.9
32.5°	440.5	440.9	440.1	438.9
35°	421.9	421.5	421.9	420.7
37.5°	404.8	404.4	404.8	406.4
40°	387.4	387.8	386.6	388.2
42.5°	370.4	370.8	370.8	370.0
45°	351.7	352.9	353.3	354.1
47.5°	333.5	335.5	334.7	335.1
50°	315.3	314.9	314.9	314.5
52.5°	295.1	293.9	293.5	293.9
55°	270.9	272.5	272.5	272.5
57.5°	251.1	251.5	252.7	251.1
60°	230.9	230.9	231.3	234.5
62.5°	208.4	208.7	209.5	209.9
65°	186.6	187.8	187.4	187.0
67.5°	165.2	165.2	165.6	164.8
70°	143.0	143.0	143.0	145.0
72.5°	120.0	120.0	120.4	121.2
75°	98.6	98.6	98.6	97.4
77.5°	75.3	75.7	75.7	76.1
80°	54.7	54.3	54.3	53.9
82.5°	34.5	34.9	34.5	34.1
85°	19.0	19.4	18.2	18.2
87.5°	6.7	6.7	6.3	7.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)