

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: P242654

Luminaire Tested: **S124DR-S575D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242654
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-21)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DR-S575D935-X4F0-XX-UDD-A-W
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2059.1 lumens
Efficiency: N/A
Efficacy: 109.5 lumens/watt
Spacing Criteria (0/90/45): 1.3 / 1.22 / 1.41
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

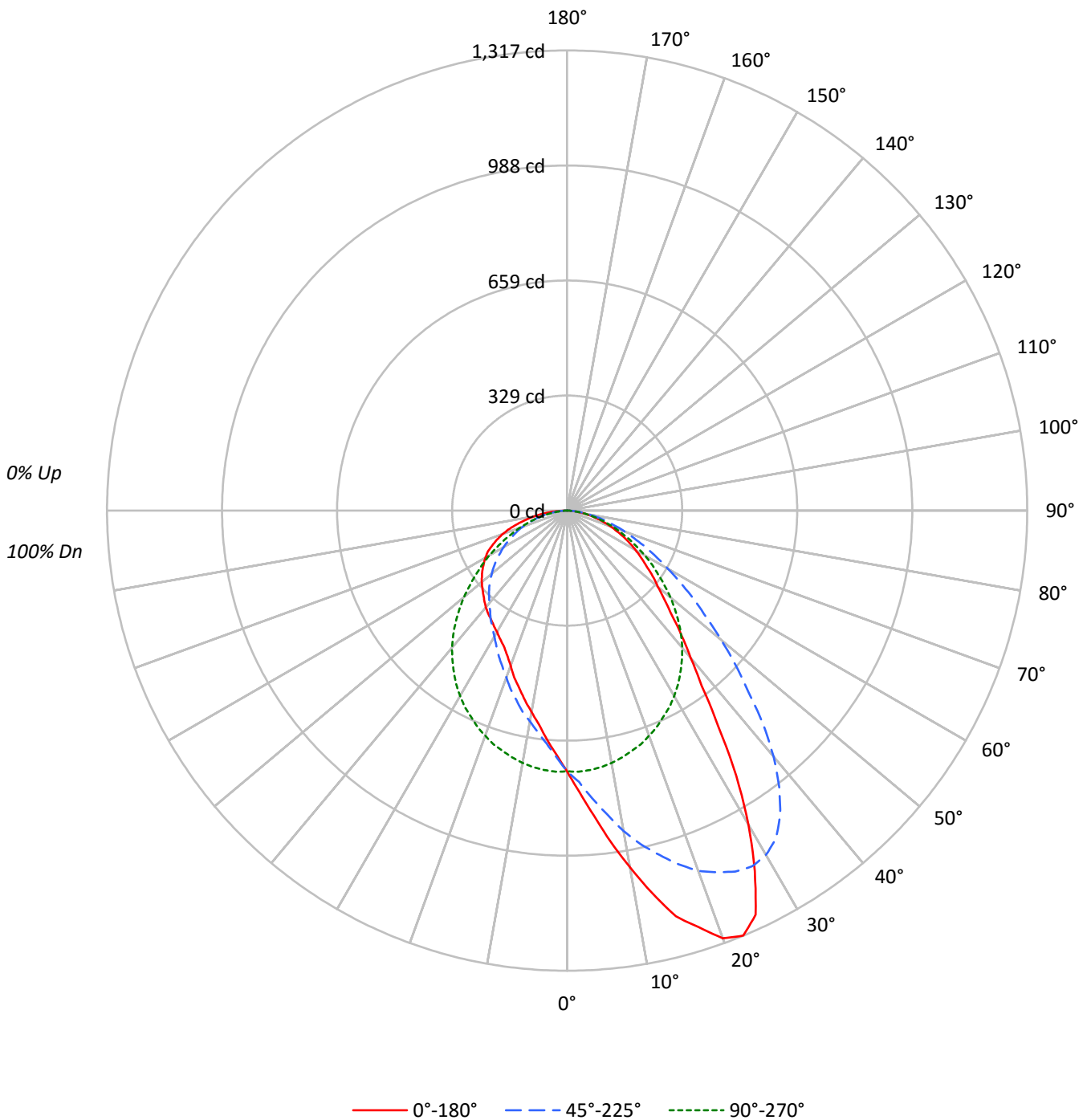
Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	101	97	107	103	99	96	98	95	93	95	92	90	91	89	87	85
2	100	92	86	80	98	90	84	79	87	82	78	84	79	76	81	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	62
4	84	73	64	58	82	72	64	58	69	62	57	67	61	56	65	60	55	53
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	58	53	49	46
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38	36
8	62	49	41	35	61	49	41	35	47	40	35	46	40	35	45	39	35	33
9	58	45	37	32	57	45	37	32	44	37	32	43	36	32	42	36	31	30
10	55	42	34	29	54	41	34	29	40	34	29	39	33	29	39	33	29	27

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	6633	6633	6633
5°	7811	6650	5869
10°	9352	6621	5285
15°	11065	6554	4852
20°	12322	6485	4468
25°	12521	6385	4202
30°	10654	6289	4118
35°	8192	6132	4119
40°	6384	5947	4197
45°	5324	5669	4267
50°	4685	5331	4411
55°	4293	4925	4589
60°	4023	4562	4804
65°	3744	4154	4981
70°	3423	3753	5094
75°	3057	3300	5031
80°	2565	2708	4873
85°	1887	1958	4661



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	72.6	3.5
10°-20°	224.2	10.9
20°-30°	356.1	17.3
30°-40°	395.7	19.2
40°-50°	359.9	17.5
50°-60°	294.1	14.3
60°-70°	209.9	10.2
70°-80°	115.5	5.6
80°-90°	31.2	1.5
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°	652.9	31.7
0°-40°	1048.6	50.9
0°-60°	1702.5	82.7
0°-90°	2059.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2059.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	746	746	746	746	746	
5°	875	827	745	670	658	89
15°	1202	1020	712	561	527	340
25°	1277	1140	651	462	428	566
35°	755	1063	565	381	380	478
45°	424	734	451	316	339	333
55°	277	442	318	247	296	250
65°	178	246	198	172	237	176
75°	89	115	96	96	146	94
85°	18	24	19	27	46	23
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	746.2	746.2	746.2	746.2	746.2	746.2	746.2	746.2	746.2	746.2	746.2
2.5°	806.2	805.9	802.8	802.1	800.0	797.2	796.6	791.6	781.7	777.1	775.9
5°	875.4	881.6	873.6	872.0	871.1	860.9	855.6	849.4	835.2	826.9	820.4
7.5°	956.4	956.7	953.3	949.9	944.0	935.4	923.6	910.0	893.6	877.0	865.2
10°	1036.1	1038.6	1034.6	1034.0	1018.2	1008.3	988.5	971.8	952.7	931.4	911.9
12.5°	1120.2	1115.3	1113.7	1097.3	1097.7	1077.6	1053.8	1036.5	1004.3	979.0	951.4
15°	1202.4	1195.6	1191.3	1173.1	1164.1	1139.1	1114.7	1095.8	1057.2	1020.4	992.6
17.5°	1250.0	1258.4	1247.3	1239.8	1215.4	1199.0	1174.6	1136.0	1107.2	1061.5	1029.7
20°	1302.6	1303.2	1297.7	1289.9	1271.7	1249.4	1222.2	1179.0	1142.8	1097.3	1049.1
22.5°	1316.8	1316.8	1315.3	1308.2	1295.5	1278.5	1251.0	1216.7	1170.9	1120.5	1072.3
25°	1276.6	1275.4	1278.2	1286.2	1281.0	1275.4	1259.6	1232.7	1191.9	1139.7	1087.8
27.5°	1162.9	1170.9	1187.6	1207.4	1221.6	1234.3	1233.4	1221.9	1192.9	1147.7	1092.4
30°	1038.0	1048.5	1060.3	1080.0	1118.4	1140.3	1164.4	1182.7	1172.5	1138.2	1087.5
32.5°	900.8	901.4	920.2	943.4	977.7	1025.0	1066.7	1108.5	1126.4	1112.5	1072.3
35°	754.9	759.2	778.0	800.3	843.3	894.9	952.4	1003.7	1046.0	1063.0	1041.4
37.5°	632.4	646.0	660.3	685.6	724.9	771.5	833.4	897.4	959.5	997.2	1001.2
40°	550.2	557.9	567.5	585.8	617.9	663.7	715.0	791.0	858.1	918.7	938.5
42.5°	485.3	489.0	494.0	510.0	532.6	578.0	623.8	688.4	755.8	831.2	867.7
45°	423.5	428.1	438.0	447.6	466.1	497.7	541.3	596.3	664.0	733.8	795.0
47.5°	377.1	380.2	386.4	396.9	413.6	434.9	472.0	518.7	584.8	652.5	718.1
50°	338.8	341.3	345.9	355.2	367.2	385.8	414.8	457.8	506.9	575.3	639.2
52.5°	308.5	309.1	312.2	317.8	326.7	341.6	364.1	397.8	442.6	501.7	565.4
55°	277.0	278.2	281.3	285.9	294.3	304.2	322.4	349.0	388.9	441.7	497.1
57.5°	251.0	252.2	254.7	256.6	264.0	272.3	287.2	306.3	337.6	384.5	434.9
60°	226.3	225.7	228.7	230.3	234.9	241.7	252.5	270.8	297.1	333.2	378.7
62.5°	202.2	201.2	203.7	205.9	208.0	213.6	221.9	235.2	255.3	287.2	324.9
65°	178.0	176.8	178.4	180.8	183.3	186.4	192.9	205.6	222.6	246.1	276.0
67.5°	153.3	154.9	154.9	156.4	158.0	162.3	166.9	176.8	188.9	208.0	234.6
70°	131.7	132.0	133.2	133.2	134.2	137.9	141.6	146.8	158.6	175.9	196.6
72.5°	110.0	111.6	110.7	111.9	112.5	114.7	117.2	122.1	131.7	143.4	160.1
75°	89.0	90.0	90.0	90.3	91.2	92.1	94.3	98.0	105.1	114.7	126.7
77.5°	68.6	68.6	69.2	70.5	70.5	72.0	73.9	76.7	80.7	87.8	95.5
80°	50.1	50.7	50.4	51.0	51.0	52.2	52.9	56.6	58.1	62.4	68.3
82.5°	33.4	34.0	34.0	34.9	35.5	35.5	36.5	37.4	38.9	42.7	44.2
85°	18.5	19.2	18.5	19.2	20.1	20.4	21.3	21.6	22.9	23.8	26.0
87.5°	6.8	7.7	7.7	8.0	8.7	9.0	9.3	9.0	10.2	10.5	11.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	746.2	746.2	746.2	746.2	746.2	746.2	746.2	746.2	746.2	746.2	746.2
2.5°	776.2	771.9	768.8	766.3	759.5	755.5	752.4	748.1	743.1	737.9	731.4
5°	813.9	803.4	795.7	783.9	772.8	763.5	753.9	745.3	734.8	723.3	715.0
7.5°	852.5	838.0	818.5	803.4	785.1	769.4	755.5	740.9	725.5	710.6	696.7
10°	889.0	868.9	846.7	820.4	795.7	773.7	753.3	733.5	714.4	695.2	678.8
12.5°	928.3	902.0	866.4	834.6	806.2	774.9	749.3	723.9	699.8	679.4	659.6
15°	962.6	926.4	888.4	847.3	810.8	776.5	742.8	712.2	686.2	659.6	641.1
17.5°	984.2	939.4	898.6	855.6	813.6	770.6	735.7	701.4	669.2	643.3	620.1
20°	1005.5	961.0	906.9	864.0	811.4	766.9	724.9	685.6	651.6	623.5	599.4
22.5°	1024.1	970.9	916.8	856.9	804.6	756.7	709.7	670.2	635.2	605.2	582.4
25°	1028.4	969.4	910.6	854.4	795.0	739.1	697.4	651.0	613.9	582.7	557.9
27.5°	1030.0	967.5	902.3	841.1	779.9	728.9	674.5	634.0	595.7	562.6	539.1
30°	1026.6	960.7	889.3	821.6	760.1	703.5	657.8	612.7	573.4	540.6	515.9
32.5°	1015.7	946.5	872.6	800.0	735.7	680.7	633.1	590.7	552.7	520.5	494.3
35°	992.9	925.2	847.0	772.5	707.2	651.3	608.6	565.1	526.7	496.1	471.1
37.5°	962.3	899.2	819.8	742.2	679.4	622.6	579.6	539.4	504.8	473.3	447.3
40°	919.6	865.8	786.1	711.0	641.7	588.2	548.7	512.5	478.2	448.8	424.4
42.5°	870.5	825.3	753.3	672.6	606.5	552.7	514.4	482.8	451.0	424.4	400.0
45°	810.2	779.3	710.0	636.5	566.9	516.2	479.4	451.0	423.8	397.2	376.8
47.5°	743.1	725.8	665.5	595.0	528.3	477.6	445.7	418.5	393.8	370.6	352.4
50°	675.4	668.0	617.6	550.2	487.2	440.2	408.0	385.5	365.1	345.3	328.3
52.5°	608.6	610.2	566.0	505.7	448.5	403.7	371.9	351.2	334.2	319.0	304.2
55°	540.3	549.0	513.4	458.4	406.2	365.4	336.6	317.8	305.4	292.1	280.7
57.5°	477.6	492.1	461.2	410.8	366.6	327.7	302.3	287.8	274.2	265.5	256.6
60°	416.4	430.0	407.1	366.3	325.2	293.0	269.2	256.6	245.1	239.6	233.7
62.5°	362.0	373.7	358.3	321.2	286.9	256.3	237.1	225.0	218.2	212.1	208.7
65°	310.7	320.9	306.3	278.8	248.2	223.5	207.1	197.5	190.1	187.6	183.3
67.5°	260.0	269.2	261.5	237.4	211.4	192.0	179.0	168.8	164.4	162.0	159.2
70°	215.8	225.0	216.7	196.3	177.4	161.7	149.6	144.4	139.7	138.8	134.5
72.5°	178.4	183.9	175.6	160.7	145.3	132.6	124.0	118.4	116.5	114.7	112.8
75°	139.4	145.0	139.4	127.0	115.6	106.3	98.3	96.1	93.4	92.4	90.9
77.5°	104.5	109.7	105.4	97.1	88.1	80.4	75.7	72.6	72.3	70.5	71.1
80°	75.4	78.5	74.5	69.2	62.4	57.5	54.4	52.9	51.0	50.4	51.6
82.5°	48.8	49.8	48.2	45.1	40.5	37.7	35.9	34.0	34.0	34.3	34.0
85°	28.1	27.8	27.5	24.4	22.9	20.7	19.5	19.2	18.9	19.5	20.1
87.5°	11.7	12.1	11.7	10.5	9.6	8.7	8.3	8.0	8.3	8.7	9.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	746.2	746.2	746.2	746.2	746.2	746.2	746.2	746.2	746.2	746.2	746.2
2.5°	728.3	725.5	721.5	715.9	711.3	706.3	705.1	703.2	706.9	703.8	702.9
5°	707.9	701.4	693.0	683.4	677.9	669.8	668.3	665.2	662.1	661.8	658.7
7.5°	686.5	677.6	667.1	657.2	648.5	639.9	634.3	633.7	628.7	626.3	623.2
10°	666.1	654.4	641.7	632.4	621.9	612.7	606.2	602.5	599.4	596.0	592.9
12.5°	642.0	629.4	619.5	609.3	596.3	589.8	578.0	570.9	570.9	571.9	562.6
15°	624.4	612.0	596.0	581.7	574.9	561.3	555.5	548.1	543.4	538.8	535.1
17.5°	602.8	587.6	575.3	559.2	546.5	536.3	528.3	524.3	516.8	510.0	505.4
20°	582.7	566.3	553.0	535.7	521.5	508.2	501.7	495.5	490.3	484.7	479.4
22.5°	562.3	545.0	528.0	511.3	498.3	484.1	477.9	468.9	464.0	461.5	456.2
25°	540.6	522.1	503.5	487.5	473.9	461.5	453.2	446.7	441.1	438.6	435.2
27.5°	517.1	498.9	481.3	462.7	447.0	438.0	431.2	426.0	422.6	418.8	417.3
30°	494.9	475.7	456.6	439.6	425.3	416.4	410.2	406.8	404.3	402.8	401.2
32.5°	472.3	453.5	433.1	417.9	405.6	397.8	393.5	390.1	389.2	388.9	388.6
35°	447.9	428.7	410.2	396.3	384.2	381.1	377.1	375.3	374.6	376.8	377.7
37.5°	424.4	406.5	389.2	375.3	367.2	362.3	360.7	360.4	362.6	364.4	366.6
40°	401.8	384.5	368.5	356.7	349.3	346.5	345.9	347.4	349.9	352.1	354.6
42.5°	379.9	362.9	348.7	337.9	333.2	330.7	331.4	332.9	336.6	339.4	343.4
45°	357.0	342.8	328.6	319.6	315.3	315.9	315.9	318.7	322.1	326.1	330.1
47.5°	335.7	321.2	309.1	301.4	299.2	298.3	299.8	303.5	308.2	312.8	318.4
50°	314.1	300.5	290.3	283.5	281.0	281.9	284.4	287.8	293.7	299.8	305.7
52.5°	292.1	280.1	270.8	264.6	263.1	264.9	267.4	273.3	278.2	285.0	292.4
55°	269.2	258.7	251.3	246.7	246.1	247.0	249.8	255.6	263.1	271.4	278.2
57.5°	246.7	237.7	230.6	227.2	227.5	228.1	232.5	239.6	247.0	255.9	264.6
60°	223.8	215.8	210.2	207.7	208.0	209.9	215.5	221.9	231.8	240.5	249.8
62.5°	202.2	195.4	190.1	187.9	187.3	192.0	197.2	204.0	213.9	223.8	234.0
65°	178.7	173.1	168.8	167.5	168.5	171.6	178.4	187.3	195.7	205.9	216.4
67.5°	155.8	151.2	148.1	148.7	149.6	153.9	159.8	167.5	176.8	187.3	198.1
70°	134.2	129.8	127.4	127.7	129.5	135.1	140.0	147.8	158.0	168.8	177.4
72.5°	111.9	109.4	107.3	108.8	110.7	114.1	120.6	128.3	136.9	146.8	156.1
75°	89.3	89.3	88.1	89.0	91.8	95.5	100.2	108.2	117.2	125.2	132.6
77.5°	70.2	69.2	69.9	70.8	72.6	77.3	82.5	88.4	95.5	103.9	110.0
80°	50.7	51.0	52.5	54.4	55.0	58.4	64.0	69.2	74.5	81.3	87.2
82.5°	34.9	35.2	35.9	38.3	38.9	42.7	45.7	51.0	55.6	59.7	64.3
85°	20.7	20.7	22.3	23.2	24.7	27.2	29.4	32.5	36.8	39.9	44.5
87.5°	9.9	9.9	11.1	11.7	12.7	14.2	14.8	18.2	19.5	21.0	23.8
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: P242654

CATALOG NUMBER: S124DR-S575D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	746.2	746.2	746.2	746.2
2.5°	702.3	701.7	699.5	699.2
5°	656.9	655.3	654.4	657.8
7.5°	622.6	621.3	618.5	617.6
10°	589.8	588.5	586.1	585.5
12.5°	558.3	555.5	555.5	556.4
15°	531.1	529.8	526.4	527.3
17.5°	503.2	502.0	497.4	502.0
20°	477.3	474.8	472.6	472.3
22.5°	452.5	450.4	450.7	448.2
25°	432.8	430.6	430.0	428.4
27.5°	416.7	415.4	414.2	414.8
30°	402.2	401.8	401.2	401.2
32.5°	390.1	390.1	390.7	390.7
35°	379.0	379.9	380.5	379.6
37.5°	369.1	369.7	370.6	371.6
40°	357.3	359.5	360.1	361.7
42.5°	346.2	348.7	350.5	350.5
45°	334.8	337.2	339.4	339.4
47.5°	323.0	326.4	328.6	328.9
50°	311.0	315.3	317.5	319.0
52.5°	299.2	303.5	306.6	307.3
55°	285.3	291.5	294.9	296.1
57.5°	272.9	278.5	282.2	283.1
60°	258.1	264.3	269.2	270.2
62.5°	243.0	249.5	253.8	256.6
65°	225.0	231.5	235.9	236.8
67.5°	206.2	213.0	215.8	217.6
70°	186.1	191.3	194.4	196.0
72.5°	163.2	168.8	172.5	172.5
75°	139.7	144.7	146.5	146.5
77.5°	115.3	118.1	120.6	121.2
80°	91.8	93.4	95.2	95.2
82.5°	67.7	68.9	70.8	70.5
85°	43.9	46.7	46.4	45.7
87.5°	24.7	25.0	26.0	26.6
90°	0.0	0.0	0.0	0.0

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