

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: P242289

Luminaire Tested: **S122DR-S290D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242289
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-19)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DR-S290D830-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1181.3 lumens
Efficiency: N/A
Efficacy: 101.8 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.23
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

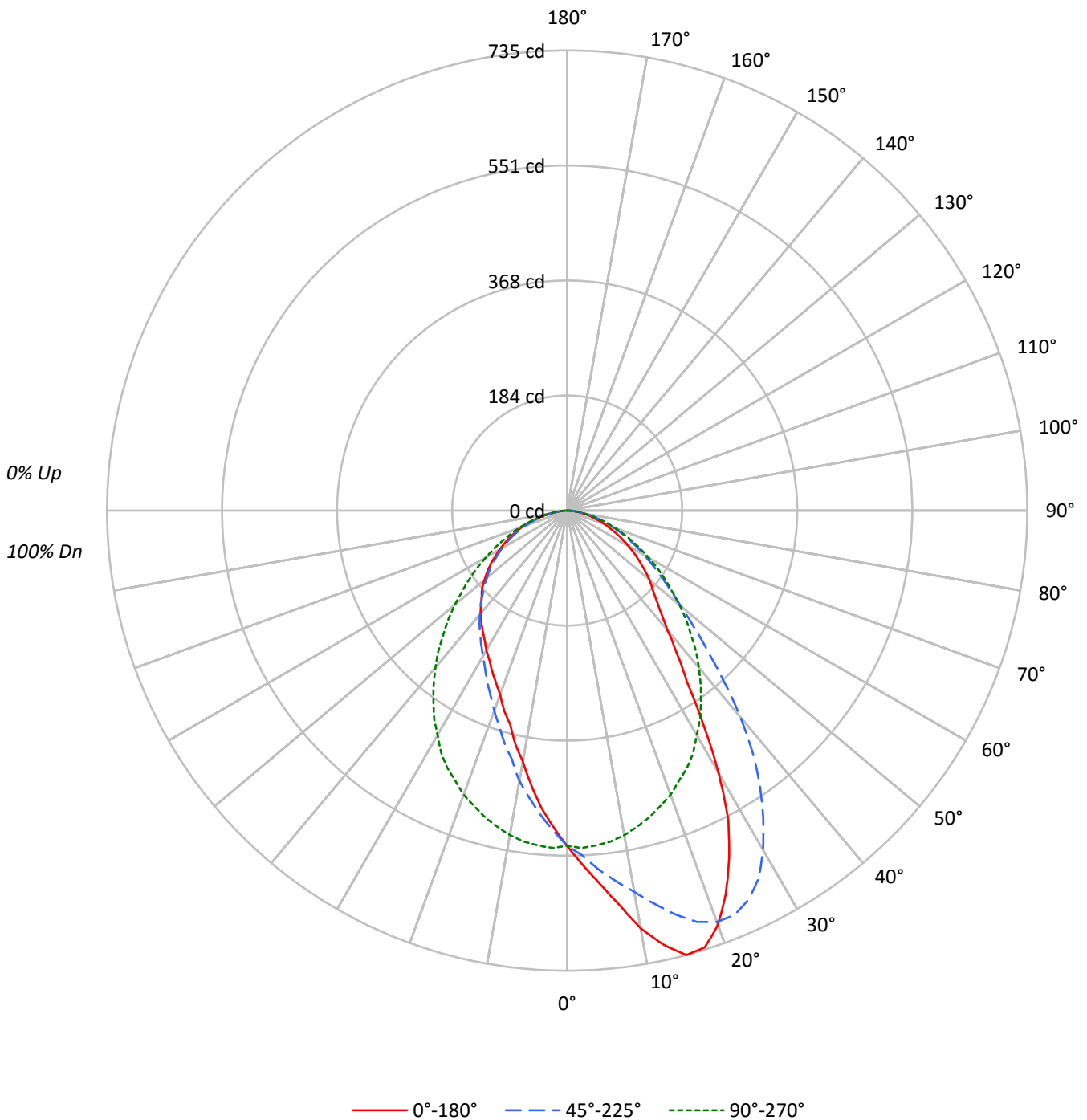
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P242289

CATALOG NUMBER: S122DR-S290D830-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





TEST NUMBER: P242289

CATALOG NUMBER: S122DR-S290D830-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	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					100			
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88					86				
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76					74				
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66					64				
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	58					55				
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51					49				
6	74	61	53	47	72	60	52	46	58	51	46	57	51	46	55	50	45					43				
7	69	56	48	42	67	55	47	42	54	46	41	52	46	41	51	45	41					39				
8	64	51	43	38	63	51	43	38	49	42	37	48	42	37	47	41	37					35				
9	60	47	39	34	59	47	39	34	46	39	34	45	38	34	44	38	34					32				
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31					29				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	10200	10200	10200
5°	11434	10266	9098
10°	13104	10181	7874
15°	14496	9996	6955
20°	14274	9795	6341
25°	12871	9529	5952
30°	10636	9101	5668
35°	7753	8657	5464
40°	6191	8131	5353
45°	5412	7524	5199
50°	5085	6934	5097
55°	4689	6336	4961
60°	4297	5699	4750
65°	3912	5129	4543
70°	3553	4572	4238
75°	3150	3952	3753
80°	2709	3269	3027
85°	2426	2426	1792



TEST NUMBER: P242289

CATALOG NUMBER: S122DR-S290D830-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	51.0	4.3
10°-20°	148.4	12.6
20°-30°	215.4	18.2
30°-40°	227.1	19.2
40°-50°	200.9	17.0
50°-60°	160.4	13.6
60°-70°	109.0	9.2
70°-80°	55.8	4.7
80°-90°	13.2	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°	414.9	35.1
0°-40°	642.0	54.3
0°-60°	1003.4	84.9
0°-90°	1181.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1181.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	536	536	536	536	536	
5°	598	576	537	488	476	59
15°	735	668	507	385	353	204
25°	612	686	453	302	283	278
35°	333	537	372	242	235	216
45°	201	318	279	191	193	157
55°	141	183	191	144	149	127
65°	87	108	114	95	101	86
75°	43	52	54	48	51	46
85°	11	12	11	9	8	13
90°	0	0	0	0	0	



TEST NUMBER: P242289

CATALOG NUMBER: S122DR-S290D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	535.5	535.5	535.5	535.5	535.5	535.5	535.5	535.5	535.5	535.5	535.5
2.5°	566.3	566.5	567.0	563.7	563.3	563.3	560.4	557.9	555.0	551.1	551.5
5°	598.0	600.3	601.1	598.6	594.9	594.5	591.0	585.3	579.9	575.6	572.5
7.5°	634.7	635.5	633.8	631.0	628.5	623.8	618.0	612.4	604.2	596.8	591.4
10°	677.5	678.7	675.2	670.5	666.6	660.8	651.3	641.7	629.9	618.6	609.6
12.5°	710.0	713.5	708.7	709.2	701.7	693.3	681.6	677.9	660.2	643.3	633.4
15°	735.1	734.9	735.3	731.4	726.4	725.2	713.3	700.3	677.1	667.8	651.7
17.5°	731.4	734.3	735.9	734.7	733.9	732.0	726.9	717.2	704.4	688.8	669.6
20°	704.2	708.3	709.0	713.7	716.4	719.9	721.3	719.0	711.8	699.3	683.2
22.5°	662.2	662.6	664.9	672.9	679.5	689.6	695.0	705.0	703.4	698.9	686.1
25°	612.4	610.4	617.6	621.3	634.7	648.7	658.7	669.9	679.7	685.7	681.8
27.5°	557.3	553.0	563.9	573.5	583.0	596.6	611.8	629.9	643.7	662.4	667.0
30°	483.6	485.5	495.8	506.2	522.7	544.1	561.8	582.2	604.2	625.8	640.8
32.5°	404.2	412.6	418.2	435.7	449.7	474.1	502.1	528.9	557.7	583.0	608.3
35°	333.4	341.6	350.7	362.4	382.8	406.4	431.7	466.1	503.6	537.1	564.7
37.5°	288.5	287.1	292.6	301.3	318.8	339.1	369.2	404.2	449.0	486.3	523.3
40°	249.0	248.2	251.9	259.7	272.3	286.3	311.8	341.6	382.6	430.7	477.0
42.5°	221.8	222.7	224.3	229.3	236.9	247.8	265.3	289.5	326.2	370.8	421.5
45°	200.9	202.3	204.6	207.2	212.2	221.6	232.3	250.4	280.1	317.9	366.9
47.5°	184.4	184.8	187.3	189.7	192.6	198.4	207.8	219.4	242.0	274.3	318.2
50°	171.6	170.2	171.8	173.7	176.8	180.5	186.2	196.9	210.9	235.8	271.0
52.5°	156.0	156.4	157.8	158.3	160.9	164.6	169.8	176.4	188.7	206.8	234.2
55°	141.2	142.2	143.0	144.3	146.7	149.4	153.5	158.5	168.3	182.9	204.4
57.5°	127.2	127.6	128.2	130.9	132.3	134.8	138.9	143.4	150.0	161.3	178.2
60°	112.8	112.8	114.4	115.4	117.5	120.0	123.1	127.4	133.1	142.0	155.0
62.5°	99.6	99.4	99.8	101.7	103.1	105.4	108.5	112.0	117.3	124.9	135.0
65°	86.8	86.4	87.7	88.1	89.7	92.0	94.5	98.4	102.7	108.5	117.9
67.5°	74.1	74.7	75.5	76.3	77.2	79.8	81.5	84.4	88.1	93.0	99.6
70°	63.8	63.8	63.8	64.4	65.6	66.9	68.5	70.8	74.3	78.4	84.2
72.5°	52.3	53.1	53.9	53.3	54.9	55.6	57.6	58.7	61.9	64.2	69.1
75°	42.8	42.8	42.8	43.8	44.5	45.1	46.3	47.5	49.2	52.5	55.2
77.5°	33.7	33.5	33.7	34.0	34.8	35.6	36.0	37.0	38.7	40.3	42.8
80°	24.7	25.1	25.3	25.7	25.7	26.1	26.3	27.8	28.8	29.8	31.3
82.5°	17.7	17.7	17.7	17.7	17.9	18.1	18.7	18.9	19.1	20.0	21.0
85°	11.1	10.9	10.9	11.3	11.1	11.1	11.5	11.9	11.9	12.1	12.8
87.5°	5.4	5.4	5.6	5.4	5.4	5.6	5.6	5.4	5.6	5.8	6.0
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: P242289

CATALOG NUMBER: S122DR-S290D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	535.5	535.5	535.5	535.5	535.5	535.5	535.5	535.5	535.5	535.5	535.5
2.5°	553.0	551.3	550.3	546.6	543.3	540.0	539.0	539.4	534.9	530.5	528.7
5°	570.9	566.7	562.8	557.3	550.7	543.5	539.8	536.9	529.7	521.9	517.4
7.5°	587.1	581.8	574.8	564.9	555.8	545.1	538.6	533.0	522.9	512.4	506.0
10°	601.7	593.7	584.0	571.3	559.5	545.8	536.1	526.4	514.1	500.9	492.7
12.5°	614.3	602.8	593.3	576.0	561.6	543.5	531.6	516.9	503.8	487.5	479.5
15°	635.7	615.7	597.6	579.1	562.0	537.9	525.2	506.9	489.8	470.4	461.2
17.5°	651.5	629.9	601.9	579.5	560.6	534.9	516.5	494.7	475.4	454.0	441.6
20°	664.7	639.0	608.3	580.3	556.5	526.0	505.6	483.2	459.5	434.6	421.0
22.5°	672.5	645.2	614.9	577.2	548.2	518.8	491.8	466.7	442.7	415.3	400.9
25°	672.9	648.2	616.1	575.8	541.6	508.1	477.2	453.4	424.3	399.2	378.5
27.5°	666.1	646.6	615.5	572.9	534.0	495.5	462.0	435.9	405.2	378.0	357.3
30°	651.1	640.8	610.8	568.0	524.6	482.4	444.5	413.8	383.4	355.8	334.4
32.5°	627.9	627.7	602.1	561.0	514.5	465.7	426.2	395.1	360.5	333.6	313.4
35°	596.0	605.8	589.2	549.9	501.3	450.1	407.7	372.3	337.3	311.4	292.2
37.5°	555.4	578.3	571.7	535.1	484.4	433.4	387.3	350.3	316.7	290.0	271.2
40°	513.2	544.5	549.1	517.6	466.3	413.4	363.8	327.0	294.5	270.6	251.7
42.5°	468.0	505.8	520.2	496.6	446.6	392.4	342.8	304.4	272.3	249.2	233.0
45°	416.3	464.7	487.1	472.7	424.1	369.0	317.9	279.3	250.0	228.2	215.3
47.5°	369.6	422.1	450.7	443.9	400.1	345.3	294.9	257.2	228.2	210.5	198.4
50°	319.4	373.7	410.1	411.8	373.7	319.6	269.0	234.0	207.8	191.6	182.1
52.5°	275.8	327.0	367.5	378.0	344.3	292.8	245.7	210.9	188.7	174.1	165.9
55°	238.9	282.8	326.8	342.8	315.1	265.7	221.4	190.8	169.2	158.9	151.5
57.5°	203.9	242.4	284.2	301.1	283.4	240.0	197.1	170.2	151.9	142.6	136.9
60°	177.4	206.2	242.4	263.6	248.8	211.1	174.9	149.6	135.2	127.2	121.8
62.5°	152.7	177.4	206.6	225.5	219.2	184.2	152.7	131.1	119.2	111.7	108.2
65°	130.1	150.2	173.9	191.8	186.4	159.5	132.9	113.8	103.9	98.0	94.9
67.5°	110.7	126.2	143.0	159.5	155.0	135.0	112.6	97.1	89.5	84.2	82.3
70°	92.6	103.7	118.3	130.9	127.4	111.7	94.9	82.1	75.7	71.4	69.6
72.5°	75.3	84.0	94.3	103.9	101.9	89.5	76.1	67.3	62.8	58.9	57.4
75°	59.5	66.5	73.3	80.1	79.4	69.4	61.1	53.7	49.8	46.7	46.1
77.5°	46.5	50.8	55.8	60.1	59.1	52.5	45.7	41.2	38.1	36.0	35.8
80°	33.5	35.8	39.1	42.0	40.5	38.1	32.9	29.8	27.8	25.7	24.9
82.5°	22.0	24.3	25.9	27.2	26.1	23.9	21.2	19.3	18.3	17.1	16.9
85°	12.8	14.0	14.8	15.2	14.8	13.4	11.9	11.1	10.1	9.5	9.3
87.5°	6.2	6.2	6.2	6.6	6.0	6.0	5.1	4.5	4.3	4.1	3.7
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: P242289

CATALOG NUMBER: S122DR-S290D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	535.5	535.5	535.5	535.5	535.5	535.5	535.5	535.5	535.5	535.5	535.5
2.5°	526.6	525.4	521.1	518.8	515.1	511.6	509.3	510.4	511.2	510.8	510.2
5°	513.2	509.3	503.4	498.2	494.5	487.7	484.8	483.4	482.2	480.7	479.3
7.5°	498.4	492.9	484.4	477.8	471.3	462.6	458.3	455.8	453.2	450.1	447.2
10°	482.4	473.7	464.7	454.4	446.2	438.5	431.7	427.2	423.1	419.2	416.3
12.5°	465.5	455.2	443.5	428.5	419.2	407.5	407.9	399.0	392.0	390.0	386.5
15°	447.4	433.4	419.2	402.5	395.3	385.4	379.3	373.1	367.5	363.6	362.6
17.5°	427.6	408.9	395.1	382.8	371.0	361.0	355.6	350.7	345.9	340.2	340.0
20°	404.4	388.7	373.3	362.8	350.7	340.4	333.4	328.4	324.5	321.4	318.8
22.5°	382.4	364.9	351.1	339.3	327.4	319.6	314.4	309.7	306.6	303.1	300.7
25°	358.5	345.1	329.7	316.7	306.8	301.5	297.0	292.8	290.8	288.5	285.6
27.5°	338.1	323.3	308.1	298.0	288.9	284.2	280.7	277.6	275.8	274.3	272.5
30°	316.3	301.3	290.0	280.1	272.9	268.1	266.1	264.4	262.2	261.4	260.5
32.5°	295.3	282.1	272.9	264.6	257.9	255.2	253.3	251.9	250.2	249.4	247.6
35°	275.8	264.4	255.0	250.2	244.7	242.0	240.6	238.5	236.9	236.0	235.8
37.5°	257.0	246.7	240.4	234.0	231.3	229.9	227.8	226.4	225.8	225.5	225.3
40°	238.9	230.9	225.3	220.4	219.4	216.9	215.3	214.0	214.0	214.2	214.0
42.5°	222.5	215.5	210.7	206.6	205.4	204.1	202.5	202.7	203.1	203.9	203.1
45°	205.8	200.6	197.1	195.1	192.8	191.4	191.2	191.8	192.0	192.2	192.8
47.5°	190.2	186.9	183.6	181.1	180.1	179.9	179.4	180.5	181.5	181.7	182.7
50°	176.6	172.7	170.0	168.5	167.7	167.3	167.7	169.0	169.8	170.8	171.4
52.5°	161.3	158.9	157.2	156.2	156.0	156.4	156.4	157.8	159.3	159.5	159.7
55°	147.6	145.5	145.1	143.2	144.1	143.8	144.9	145.7	146.9	148.2	148.4
57.5°	133.6	131.7	130.5	130.7	130.9	131.7	132.5	134.0	135.4	136.9	136.9
60°	119.6	118.7	118.1	118.1	118.5	119.8	120.8	122.2	123.1	123.9	124.5
62.5°	106.8	106.0	105.4	105.8	107.0	107.6	108.9	109.5	110.3	111.1	111.3
65°	93.2	92.8	93.4	93.8	94.0	95.1	96.5	97.1	98.0	98.4	99.8
67.5°	80.9	80.9	80.7	81.3	82.5	82.7	84.2	85.8	85.8	86.6	87.7
70°	68.3	68.7	69.1	69.6	70.6	71.0	72.0	72.6	73.5	74.1	74.7
72.5°	56.8	56.8	57.2	57.0	57.8	58.9	59.7	60.3	61.1	61.9	62.6
75°	45.5	45.5	45.9	46.1	47.1	48.2	47.9	48.4	49.2	50.0	50.4
77.5°	35.2	34.8	35.2	35.4	35.8	36.6	36.8	37.5	38.5	38.3	38.7
80°	25.3	24.7	25.3	25.5	25.5	26.5	26.5	27.0	27.6	27.0	27.6
82.5°	16.3	16.1	16.5	16.5	16.9	16.7	17.1	17.1	17.7	17.5	17.7
85°	9.1	8.8	9.1	8.8	9.1	9.3	9.3	9.1	9.1	9.5	8.8
87.5°	3.5	3.3	3.1	3.1	2.9	2.7	2.5	2.5	2.5	2.1	2.1
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: P242289

CATALOG NUMBER: S122DR-S290D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	535.5	535.5	535.5	535.5
2.5°	508.1	507.7	507.7	505.8
5°	476.4	475.8	474.8	475.8
7.5°	446.4	443.7	443.3	441.2
10°	412.8	411.2	411.0	407.1
12.5°	387.3	382.8	383.8	381.9
15°	357.0	357.0	356.2	352.7
17.5°	335.4	335.2	333.4	334.6
20°	316.5	315.3	312.8	312.8
22.5°	298.6	298.8	296.1	297.2
25°	285.4	283.8	282.6	283.2
27.5°	271.9	271.2	271.0	269.2
30°	260.3	258.3	258.7	257.7
32.5°	247.2	246.7	246.1	245.3
35°	235.4	235.6	234.6	235.0
37.5°	224.9	225.8	225.1	225.1
40°	214.6	214.6	214.6	215.3
42.5°	204.8	204.4	203.9	203.7
45°	193.2	193.9	194.1	193.0
47.5°	183.2	183.4	183.2	184.4
50°	172.5	172.0	172.5	172.0
52.5°	161.1	161.3	160.9	160.9
55°	149.2	149.6	149.4	149.4
57.5°	137.1	137.3	137.7	136.6
60°	124.3	125.3	125.1	124.7
62.5°	112.6	112.8	112.8	112.8
65°	100.4	100.8	100.2	100.8
67.5°	87.3	87.5	87.9	88.1
70°	75.1	74.9	75.5	76.1
72.5°	62.4	63.0	62.6	63.0
75°	50.0	50.6	50.4	51.0
77.5°	38.3	38.5	38.5	38.7
80°	27.6	27.2	26.8	27.6
82.5°	17.1	17.5	17.1	16.9
85°	8.8	8.6	8.2	8.2
87.5°	2.1	1.9	1.9	1.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)