

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: P242309

Luminaire Tested: **S122DR-S290D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242309
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-S290D935-X4F0-XX-UDD-A-W
Description: DEFINE 2 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: 1079.1 lumens
Efficiency: N/A
Efficacy: 93.0 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

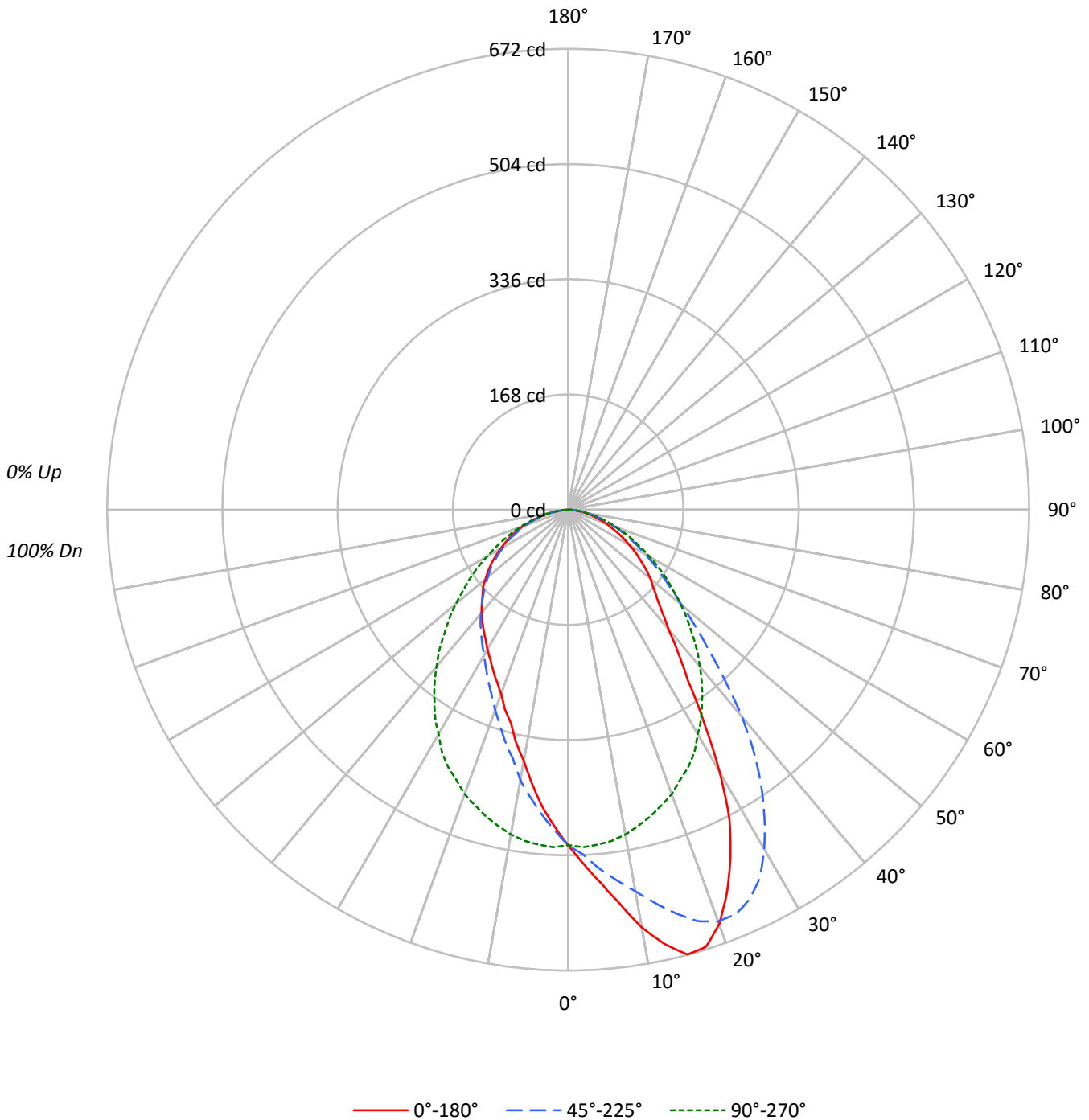
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P242309

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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	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°	9316	9316	9316
5°	10446	9379	8310
10°	11970	9301	7191
15°	13242	9130	6354
20°	13040	8947	5791
25°	11759	8703	5437
30°	9717	8314	5177
35°	7081	7908	4992
40°	5657	7427	4888
45°	4943	6872	4749
50°	4646	6333	4658
55°	4284	5788	4533
60°	3924	5208	4339
65°	3574	4687	4151
70°	3247	4177	3876
75°	2878	3613	3430
80°	2479	2995	2764
85°	2229	2229	1639



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.6	4.3
10°-20°	135.6	12.6
20°-30°	196.8	18.2
30°-40°	207.5	19.2
40°-50°	183.6	17.0
50°-60°	146.5	13.6
60°-70°	99.5	9.2
70°-80°	50.9	4.7
80°-90°	12.0	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°	379.0	35.1
0°-40°	586.5	54.3
0°-60°	916.6	84.9
0°-90°	1079.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1079.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	489	489	489	489	489	
5°	546	526	490	446	435	54
15°	672	610	463	352	322	186
25°	560	626	414	275	259	254
35°	304	491	340	221	215	197
45°	184	290	255	175	176	144
55°	129	167	174	131	136	116
65°	79	99	104	87	92	79
75°	39	48	49	44	47	42
85°	10	11	10	8	8	12
90°	0	0	0	0	0	



TEST NUMBER: P242309

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	489.1	489.1	489.1	489.1	489.1	489.1	489.1	489.1	489.1	489.1	489.1
2.5°	517.3	517.5	517.9	514.9	514.5	514.5	511.9	509.6	507.0	503.4	503.8
5°	546.3	548.4	549.1	546.9	543.5	543.1	539.9	534.6	529.7	525.8	523.0
7.5°	579.8	580.5	579.0	576.4	574.1	569.8	564.5	559.5	551.9	545.2	540.3
10°	618.9	620.0	616.8	612.5	608.9	603.6	595.0	586.1	575.4	565.1	556.8
12.5°	648.6	651.8	647.4	647.8	641.0	633.3	622.6	619.2	603.1	587.6	578.6
15°	671.5	671.3	671.7	668.1	663.6	662.5	651.6	639.7	618.5	610.0	595.4
17.5°	668.1	670.7	672.2	671.1	670.4	668.7	664.0	655.1	643.5	629.2	611.7
20°	643.3	647.1	647.6	651.9	654.4	657.6	658.9	656.8	650.2	638.8	624.1
22.5°	604.9	605.3	607.4	614.7	620.7	629.9	634.8	644.0	642.5	638.4	626.8
25°	559.5	557.6	564.2	567.5	579.8	592.5	601.7	611.9	620.9	626.4	622.8
27.5°	509.1	505.1	515.1	523.9	532.6	545.0	558.9	575.4	588.0	605.1	609.3
30°	441.8	443.5	452.9	462.4	477.5	497.0	513.2	531.8	551.9	571.7	585.4
32.5°	369.2	376.9	382.0	398.0	410.8	433.1	458.7	483.1	509.4	532.6	555.7
35°	304.5	312.1	320.3	331.0	349.7	371.3	394.4	425.8	460.0	490.6	515.8
37.5°	263.6	262.2	267.3	275.2	291.2	309.8	337.2	369.2	410.2	444.2	478.1
40°	227.5	226.7	230.1	237.2	248.7	261.5	284.8	312.1	349.5	393.5	435.8
42.5°	202.7	203.4	204.9	209.4	216.4	226.3	242.3	264.5	298.0	338.8	385.0
45°	183.5	184.8	186.9	189.3	193.8	202.5	212.2	228.8	255.9	290.4	335.2
47.5°	168.4	168.8	171.1	173.3	176.0	181.2	189.9	200.4	221.1	250.6	290.6
50°	156.8	155.5	157.0	158.7	161.5	164.9	170.1	179.9	192.7	215.4	247.6
52.5°	142.5	142.9	144.2	144.6	147.0	150.4	155.1	161.1	172.4	188.9	213.9
55°	129.0	129.9	130.7	131.8	134.0	136.5	140.2	144.8	153.8	167.1	186.7
57.5°	116.2	116.6	117.1	119.6	120.9	123.1	126.9	131.0	137.0	147.4	162.8
60°	103.0	103.0	104.5	105.5	107.3	109.6	112.4	116.4	121.6	129.7	141.6
62.5°	91.0	90.8	91.2	92.9	94.2	96.2	99.1	102.3	107.2	114.1	123.3
65°	79.3	79.0	80.1	80.5	82.0	84.0	86.3	89.9	93.8	99.1	107.7
67.5°	67.7	68.2	69.0	69.7	70.5	72.9	74.4	77.1	80.5	85.0	91.0
70°	58.3	58.3	58.3	58.8	60.0	61.1	62.6	64.7	67.9	71.6	76.9
72.5°	47.7	48.5	49.3	48.7	50.2	50.8	52.6	53.6	56.6	58.7	63.2
75°	39.1	39.1	39.1	40.0	40.6	41.2	42.3	43.4	44.9	47.9	50.4
77.5°	30.8	30.6	30.8	31.0	31.8	32.5	32.9	33.8	35.3	36.8	39.1
80°	22.6	22.9	23.1	23.5	23.5	23.9	24.1	25.4	26.3	27.3	28.6
82.5°	16.2	16.2	16.2	16.2	16.4	16.5	17.1	17.3	17.5	18.2	19.2
85°	10.2	10.0	10.0	10.3	10.2	10.2	10.5	10.9	10.9	11.1	11.7
87.5°	4.9	4.9	5.1	4.9	4.9	5.1	5.1	4.9	5.1	5.3	5.5
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°	489.1	489.1	489.1	489.1	489.1	489.1	489.1	489.1	489.1	489.1	489.1
2.5°	505.1	503.6	502.7	499.3	496.3	493.3	492.3	492.7	488.6	484.6	482.9
5°	521.5	517.7	514.1	509.1	503.1	496.5	493.1	490.5	483.9	476.7	472.6
7.5°	536.3	531.4	525.0	516.0	507.8	498.0	492.0	486.9	477.7	468.1	462.3
10°	549.7	542.3	533.5	521.9	511.1	498.5	489.7	480.9	469.6	457.6	450.0
12.5°	561.1	550.6	542.0	526.2	513.0	496.5	485.6	472.2	460.2	445.3	438.0
15°	580.7	562.5	545.9	529.0	513.4	491.4	479.7	463.0	447.4	429.7	421.3
17.5°	595.2	575.4	549.9	529.4	512.1	488.6	471.8	451.9	434.3	414.7	403.4
20°	607.2	583.7	555.7	530.1	508.3	480.5	461.9	441.4	419.8	397.0	384.6
22.5°	614.3	589.3	561.7	527.3	500.8	473.9	449.3	426.4	404.4	379.4	366.2
25°	614.7	592.2	562.8	526.0	494.8	464.1	435.9	414.1	387.6	364.7	345.7
27.5°	608.5	590.7	562.3	523.4	487.8	452.7	422.0	398.2	370.1	345.3	326.3
30°	594.8	585.4	557.9	518.8	479.2	440.6	406.1	378.0	350.2	325.0	305.5
32.5°	573.5	573.4	550.1	512.5	470.0	425.4	389.3	360.9	329.4	304.7	286.3
35°	544.4	553.4	538.2	502.3	457.9	411.1	372.4	340.1	308.1	284.4	266.9
37.5°	507.4	528.2	522.2	488.8	442.5	395.9	353.8	320.0	289.3	264.9	247.8
40°	468.8	497.4	501.6	472.8	426.0	377.7	332.4	298.7	269.0	247.2	229.9
42.5°	427.5	462.1	475.2	453.6	407.9	358.5	313.2	278.0	248.7	227.7	212.8
45°	380.3	424.5	445.0	431.8	387.4	337.1	290.4	255.1	228.4	208.5	196.6
47.5°	337.6	385.6	411.7	405.5	365.4	315.4	269.4	235.0	208.5	192.3	181.2
50°	291.8	341.4	374.7	376.2	341.4	291.9	245.7	213.7	189.9	175.0	166.4
52.5°	251.9	298.7	335.7	345.3	314.5	267.5	224.5	192.7	172.4	159.0	151.5
55°	218.3	258.3	298.5	313.2	287.8	242.7	202.3	174.3	154.5	145.1	138.4
57.5°	186.3	221.4	259.6	275.0	258.9	219.2	180.1	155.5	138.7	130.3	125.0
60°	162.0	188.4	221.4	240.8	227.3	192.9	159.8	136.7	123.5	116.2	111.3
62.5°	139.5	162.0	188.7	206.0	200.2	168.2	139.5	119.7	108.8	102.1	98.9
65°	118.8	137.2	158.8	175.2	170.3	145.7	121.4	104.0	94.9	89.5	86.7
67.5°	101.1	115.2	130.7	145.7	141.6	123.3	102.8	88.7	81.8	76.9	75.2
70°	84.6	94.7	108.1	119.6	116.4	102.1	86.7	75.0	69.2	65.2	63.5
72.5°	68.8	76.7	86.1	94.9	93.1	81.8	69.6	61.5	57.3	53.8	52.4
75°	54.3	60.7	66.9	73.1	72.6	63.4	55.8	49.1	45.5	42.7	42.1
77.5°	42.5	46.4	50.9	54.9	54.0	47.9	41.7	37.6	34.8	32.9	32.7
80°	30.6	32.7	35.7	38.3	37.0	34.8	30.1	27.3	25.4	23.5	22.7
82.5°	20.1	22.2	23.7	24.8	23.9	21.8	19.4	17.7	16.7	15.6	15.4
85°	11.7	12.8	13.5	13.9	13.5	12.2	10.9	10.2	9.2	8.6	8.5
87.5°	5.6	5.6	5.6	6.0	5.5	5.5	4.7	4.1	3.9	3.8	3.4
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°	489.1	489.1	489.1	489.1	489.1	489.1	489.1	489.1	489.1	489.1	489.1
2.5°	481.1	479.9	476.0	473.9	470.5	467.3	465.3	466.2	467.0	466.6	466.0
5°	468.8	465.3	459.8	455.1	451.7	445.5	442.9	441.6	440.5	439.1	437.8
7.5°	455.3	450.2	442.5	436.5	430.5	422.6	418.6	416.4	413.9	411.1	408.5
10°	440.6	432.7	424.5	415.1	407.6	400.6	394.4	390.3	386.5	382.9	380.3
12.5°	425.2	415.8	405.1	391.4	382.9	372.2	372.6	364.5	358.1	356.2	353.0
15°	408.7	395.9	382.9	367.7	361.1	352.1	346.5	340.8	335.7	332.2	331.2
17.5°	390.6	373.5	360.9	349.7	338.9	329.7	324.8	320.3	316.0	310.7	310.6
20°	369.4	355.1	341.0	331.4	320.3	310.9	304.5	300.0	296.5	293.6	291.2
22.5°	349.3	333.3	320.7	310.0	299.1	291.9	287.2	282.9	280.1	276.9	274.6
25°	327.5	315.3	301.2	289.3	280.3	275.4	271.3	267.5	265.6	263.6	260.9
27.5°	308.9	295.3	281.4	272.2	263.9	259.6	256.4	253.6	251.9	250.6	248.9
30°	288.9	275.2	264.9	255.9	249.3	244.9	243.1	241.6	239.5	238.7	238.0
32.5°	269.8	257.7	249.3	241.8	235.5	233.1	231.4	230.1	228.6	227.8	226.1
35°	251.9	241.6	232.9	228.6	223.5	221.1	219.8	217.9	216.4	215.6	215.4
37.5°	234.8	225.4	219.6	213.7	211.3	210.0	208.1	206.8	206.2	206.0	205.8
40°	218.3	210.9	205.8	201.3	200.4	198.1	196.6	195.5	195.5	195.7	195.5
42.5°	203.2	196.8	192.5	188.7	187.6	186.5	185.0	185.2	185.5	186.3	185.5
45°	188.0	183.3	180.1	178.2	176.1	174.8	174.6	175.2	175.4	175.6	176.1
47.5°	173.7	170.7	167.7	165.4	164.5	164.3	163.9	164.9	165.8	166.0	166.9
50°	161.3	157.7	155.3	154.0	153.2	152.8	153.2	154.3	155.1	156.0	156.6
52.5°	147.4	145.1	143.6	142.7	142.5	142.9	142.9	144.2	145.5	145.7	145.9
55°	134.8	132.9	132.5	130.8	131.6	131.4	132.3	133.1	134.2	135.4	135.5
57.5°	122.0	120.3	119.2	119.4	119.6	120.3	121.1	122.4	123.7	125.0	125.0
60°	109.2	108.5	107.9	107.9	108.3	109.4	110.3	111.7	112.4	113.2	113.7
62.5°	97.6	96.8	96.2	96.6	97.8	98.3	99.4	100.0	100.8	101.5	101.7
65°	85.2	84.8	85.3	85.7	85.9	86.9	88.2	88.7	89.5	89.9	91.2
67.5°	73.9	73.9	73.7	74.3	75.4	75.6	76.9	78.4	78.4	79.1	80.1
70°	62.4	62.8	63.2	63.5	64.5	64.9	65.8	66.4	67.1	67.7	68.2
72.5°	51.9	51.9	52.3	52.1	52.8	53.8	54.5	55.1	55.8	56.6	57.1
75°	41.5	41.5	41.9	42.1	43.0	44.0	43.8	44.2	44.9	45.7	46.1
77.5°	32.1	31.8	32.1	32.3	32.7	33.5	33.6	34.2	35.2	35.0	35.3
80°	23.1	22.6	23.1	23.3	23.3	24.3	24.3	24.6	25.2	24.6	25.2
82.5°	14.9	14.7	15.0	15.0	15.4	15.2	15.6	15.6	16.2	16.0	16.2
85°	8.3	8.1	8.3	8.1	8.3	8.5	8.5	8.3	8.3	8.6	8.1
87.5°	3.2	3.0	2.8	2.8	2.6	2.4	2.3	2.3	2.3	1.9	1.9
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: P242309

CATALOG NUMBER: S122DR-S290D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	489.1	489.1	489.1	489.1
2.5°	464.1	463.8	463.8	462.1
5°	435.2	434.6	433.7	434.6
7.5°	407.7	405.3	404.9	403.0
10°	377.1	375.6	375.4	371.8
12.5°	353.8	349.7	350.6	348.9
15°	326.2	326.2	325.4	322.2
17.5°	306.4	306.2	304.5	305.7
20°	289.1	288.0	285.7	285.7
22.5°	272.8	273.0	270.5	271.5
25°	260.7	259.2	258.1	258.7
27.5°	248.3	247.8	247.6	245.9
30°	237.8	235.9	236.3	235.4
32.5°	225.8	225.4	224.8	224.1
35°	215.1	215.2	214.3	214.7
37.5°	205.5	206.2	205.7	205.7
40°	196.1	196.1	196.1	196.6
42.5°	187.0	186.7	186.3	186.1
45°	176.5	177.1	177.3	176.3
47.5°	167.3	167.5	167.3	168.4
50°	157.5	157.2	157.5	157.2
52.5°	147.2	147.4	147.0	147.0
55°	136.3	136.7	136.5	136.5
57.5°	125.2	125.4	125.8	124.8
60°	113.5	114.5	114.3	113.9
62.5°	102.8	103.0	103.0	103.0
65°	91.7	92.1	91.5	92.1
67.5°	79.7	79.9	80.3	80.5
70°	68.6	68.4	69.0	69.6
72.5°	57.0	57.5	57.1	57.5
75°	45.7	46.2	46.1	46.6
77.5°	35.0	35.2	35.2	35.3
80°	25.2	24.8	24.4	25.2
82.5°	15.6	16.0	15.6	15.4
85°	8.1	7.9	7.5	7.5
87.5°	1.9	1.7	1.7	1.5
90°	0.0	0.0	0.0	0.0

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