

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: P242225

Luminaire Tested: **S121RDR-S305D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242225
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-28)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S121RDR-S305D835-X4F0-XX-UDD-A-W
Description: DEFINE 1 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1052.2 lumens
Efficiency: N/A
Efficacy: 90.7 lumens/watt
Spacing Criteria (0/90/45): 0.96 / 1.23 / 1.1
Luminous Opening: Rectangular (W 3.88' x L: 0.09' x H: 0')
CIE Type: Direct

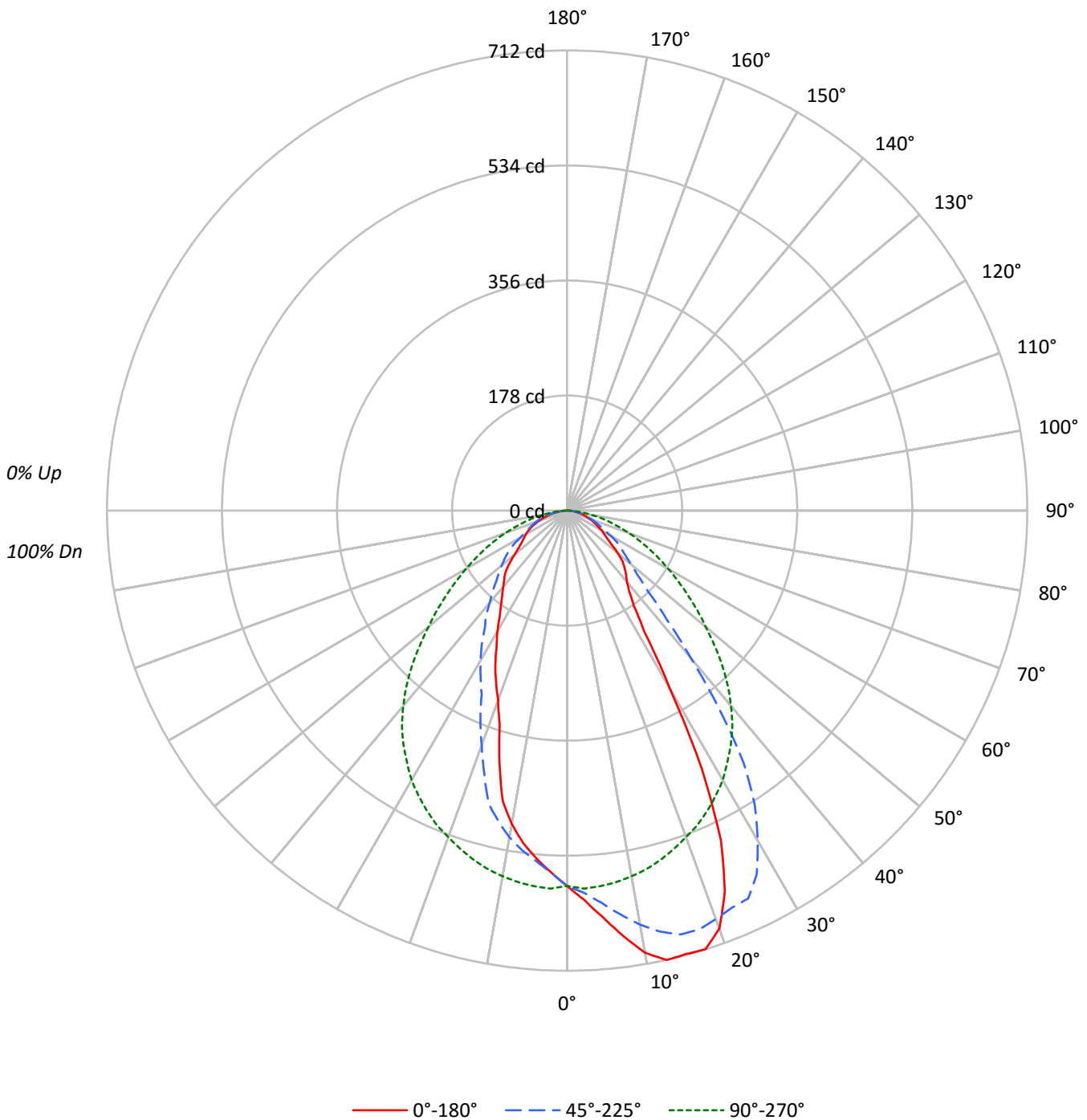
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P242225

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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	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	111	107	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89				87	
2	102	95	89	84	100	93	88	83	90	85	82	87	83	80	84	81	78				76	
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	68				67	
4	88	77	69	64	85	76	69	63	73	67	62	71	66	61	69	65	61				59	
5	81	70	62	56	79	69	62	56	67	60	55	65	59	55	63	58	54				52	
6	76	64	56	50	74	63	56	50	61	55	50	60	54	49	58	53	49				47	
7	71	59	51	45	69	58	51	45	57	50	45	55	49	45	54	48	44				43	
8	67	54	47	41	65	54	46	41	52	46	41	51	45	41	50	45	40				39	
9	63	50	43	38	61	50	43	38	49	42	37	48	42	37	47	41	37				35	
10	59	47	40	35	58	46	39	35	45	39	35	44	39	34	44	38	34				33	

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	17206	17206	17206
5°	18780	17358	16079
10°	20901	17288	14818
15°	21791	17156	12402
20°	21700	16954	9844
25°	18399	16765	8595
30°	10832	16477	7380
35°	6507	15977	6446
40°	5574	15251	5945
45°	5271	14218	5653
50°	4711	12911	4891
55°	3926	11783	4422
60°	3650	10738	4397
65°	3365	9780	4256
70°	3179	8810	4011
75°	2999	7796	3652
80°	2679	6518	3208
85°	2516	5133	2516



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	55.7	5.3
10°-20°	158.6	15.1
20°-30°	216.6	20.6
30°-40°	201.8	19.2
40°-50°	166.9	15.9
50°-60°	123.0	11.7
60°-70°	78.7	7.5
70°-80°	40.5	3.8
80°-90°	10.4	1.0
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°	430.9	41.0
0°-40°	632.8	60.1
0°-60°	922.6	87.7
0°-90°	1052.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1052.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	581	581	581	581	581	
5°	631	609	584	545	541	62
15°	710	679	559	469	404	200
25°	563	662	513	313	263	244
35°	180	476	442	222	178	122
45°	126	178	339	155	135	96
55°	76	102	228	111	86	70
65°	48	56	140	65	61	48
75°	26	29	68	36	32	27
85°	7	8	15	8	7	8
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°	580.7	580.7	580.7	580.7	580.7	580.7	580.7	580.7	580.7	580.7	580.7
2.5°	603.0	602.6	603.2	602.8	602.4	601.3	600.4	597.8	593.8	591.7	593.8
5°	631.4	633.1	632.5	631.6	629.6	627.9	624.0	621.6	614.6	609.1	610.7
7.5°	663.7	665.9	663.1	661.1	660.0	655.0	650.6	643.8	636.2	630.1	626.6
10°	694.7	695.4	694.5	692.7	689.0	683.6	677.2	669.6	660.0	650.6	644.3
12.5°	712.2	713.3	714.6	711.5	708.7	704.3	697.8	690.1	678.3	667.4	660.2
15°	710.4	711.3	713.7	712.6	711.3	709.3	705.6	699.3	691.0	679.0	668.7
17.5°	711.7	712.4	713.5	709.6	707.4	705.0	700.2	695.8	688.8	679.4	671.8
20°	688.2	698.9	697.5	702.8	705.0	704.7	700.2	691.9	682.3	672.7	669.2
22.5°	637.5	646.0	647.1	655.2	665.2	673.3	683.4	687.1	679.6	665.2	660.4
25°	562.8	569.0	575.1	586.6	597.3	619.8	640.3	655.8	664.4	662.4	653.0
27.5°	452.4	445.8	470.1	483.4	513.3	546.0	574.8	603.2	616.8	634.9	644.1
30°	316.6	315.9	334.3	357.4	402.2	432.3	486.2	531.8	567.4	589.7	614.6
32.5°	222.3	225.5	239.1	253.3	277.9	327.0	368.3	431.2	491.9	540.6	571.1
35°	179.9	180.3	183.4	191.9	207.0	234.3	266.4	327.5	409.8	475.9	521.6
37.5°	157.6	158.9	159.8	164.6	170.1	181.6	201.9	244.3	312.4	386.2	465.5
40°	144.1	145.2	146.1	147.6	150.9	156.3	169.6	189.9	229.2	297.1	385.3
42.5°	134.9	134.5	136.5	137.1	138.9	141.9	147.8	158.7	181.4	227.5	303.5
45°	125.8	126.4	126.4	127.3	128.8	130.6	133.0	139.7	151.3	177.5	237.1
47.5°	116.1	115.9	117.2	117.9	119.4	121.0	122.7	126.2	133.0	148.2	182.7
50°	102.2	102.6	105.0	107.2	109.4	111.3	113.5	115.7	120.1	128.4	149.6
52.5°	87.3	87.3	89.9	91.5	94.5	99.3	103.0	106.3	109.2	113.3	126.0
55°	76.0	76.2	77.1	78.4	80.6	83.0	87.8	93.4	98.2	101.7	108.7
57.5°	68.1	68.3	68.6	69.6	70.7	71.6	74.4	78.8	85.1	91.5	95.6
60°	61.6	61.3	61.3	62.0	62.9	64.0	65.5	67.2	70.7	77.5	84.9
62.5°	54.1	54.6	54.6	55.2	55.9	57.0	57.6	59.4	61.3	64.4	72.0
65°	48.0	48.5	48.0	48.7	49.1	49.8	50.9	51.7	53.5	55.5	58.5
67.5°	41.9	42.1	42.6	42.8	43.2	43.4	44.3	45.4	46.5	47.8	50.2
70°	36.7	36.7	36.7	37.1	37.6	37.6	38.2	38.6	39.7	41.0	42.4
72.5°	31.0	31.2	31.2	31.0	31.9	32.1	32.3	32.7	33.6	34.7	35.8
75°	26.2	25.8	25.8	26.0	26.6	26.6	26.9	27.1	27.7	28.6	29.3
77.5°	20.5	20.5	20.7	21.0	21.2	21.2	21.6	21.6	22.5	22.9	23.4
80°	15.7	16.2	16.4	16.2	16.2	16.4	16.4	16.8	17.0	17.2	17.7
82.5°	11.8	12.0	11.6	11.6	11.8	11.8	12.0	12.0	12.2	12.4	12.4
85°	7.4	7.4	7.6	7.4	7.6	7.4	7.4	7.9	7.6	7.6	7.9
87.5°	3.5	3.7	3.5	3.7	3.5	3.7	3.7	3.7	3.7	3.7	3.5
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°	580.7	580.7	580.7	580.7	580.7	580.7	580.7	580.7	580.7	580.7	580.7
2.5°	593.2	593.0	591.9	589.5	587.7	584.5	584.5	585.5	579.9	575.9	575.7
5°	606.9	604.8	601.0	596.5	592.3	586.6	584.5	583.6	575.9	570.0	568.1
7.5°	621.6	616.1	609.8	602.4	595.4	587.3	583.1	579.9	570.0	562.8	558.5
10°	636.9	628.1	618.3	607.6	598.0	587.1	580.3	574.6	563.3	553.2	548.2
12.5°	650.4	638.2	625.7	611.7	598.6	584.9	575.5	568.1	554.8	542.8	536.6
15°	656.7	643.6	633.4	614.1	596.5	582.5	570.5	559.3	545.2	531.8	522.4
17.5°	662.2	647.8	634.2	616.1	595.6	577.5	563.1	548.9	533.6	519.6	508.0
20°	660.6	648.4	631.8	612.6	593.2	572.2	555.9	537.7	518.7	504.5	492.3
22.5°	651.9	641.9	624.6	606.3	587.5	565.0	546.5	526.8	503.5	488.0	474.2
25°	640.8	631.2	614.1	595.2	576.6	554.8	532.9	512.8	487.7	469.2	451.5
27.5°	632.0	617.6	600.6	579.4	561.5	540.8	517.9	497.6	470.5	450.0	429.4
30°	622.0	605.6	584.7	562.2	543.2	524.2	501.9	481.6	451.7	428.4	402.8
32.5°	593.2	593.4	568.5	543.4	523.1	502.8	482.9	461.3	431.6	404.1	377.9
35°	555.6	570.3	551.9	523.1	498.0	479.2	462.8	441.7	408.7	380.3	350.6
37.5°	505.4	531.2	533.4	503.5	475.7	453.7	437.5	419.8	386.7	356.1	326.6
40°	455.2	489.3	502.8	482.1	451.9	426.6	410.4	394.3	363.1	330.1	302.8
42.5°	393.6	448.9	465.7	459.6	427.3	400.0	382.9	368.3	338.0	305.7	278.6
45°	324.2	398.9	423.3	429.7	402.4	373.1	353.5	339.3	312.6	284.3	256.1
47.5°	260.5	342.6	382.9	389.5	375.1	346.7	324.2	309.4	288.2	263.7	235.8
50°	198.7	282.7	340.6	350.6	347.1	318.3	297.6	280.1	264.0	242.1	215.9
52.5°	158.1	226.0	294.7	313.5	314.6	291.9	270.1	254.1	238.4	221.2	197.4
55°	126.2	174.7	244.3	276.2	279.2	263.5	243.4	228.1	216.4	200.2	180.1
57.5°	106.3	135.1	195.6	238.6	239.9	235.6	216.4	203.7	193.9	179.9	162.2
60°	90.8	107.2	150.9	201.1	207.6	207.6	192.3	181.2	171.8	161.3	144.5
62.5°	78.6	87.5	114.4	159.8	176.6	179.2	169.6	159.8	152.8	142.3	126.8
65°	66.2	72.9	88.6	123.6	146.7	151.5	146.7	139.5	134.1	123.1	110.9
67.5°	54.4	60.9	70.7	93.7	119.0	124.9	124.0	120.3	114.6	106.5	93.7
70°	45.0	48.9	56.1	69.4	93.4	102.4	105.0	101.7	96.7	88.0	78.6
72.5°	37.1	40.2	43.7	53.3	69.9	81.7	86.0	84.3	80.6	72.3	64.4
75°	30.3	32.3	34.7	39.3	50.2	63.5	68.6	68.1	64.4	57.4	51.1
77.5°	24.5	25.1	26.9	29.7	35.2	47.2	51.1	52.4	49.6	43.7	38.6
80°	18.3	19.2	20.1	21.6	24.2	31.2	36.2	38.2	35.8	32.3	27.3
82.5°	12.9	13.1	14.0	14.8	16.2	19.0	24.2	26.4	24.2	20.5	19.0
85°	8.1	7.9	8.1	8.3	9.6	10.3	13.5	15.1	14.6	12.4	10.7
87.5°	3.7	3.7	3.5	3.7	3.5	4.1	4.8	7.0	5.2	4.6	4.1
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°	580.7	580.7	580.7	580.7	580.7	580.7	580.7	580.7	580.7	580.7	580.7
2.5°	574.0	573.3	571.1	568.1	565.5	561.1	561.1	562.2	562.0	562.4	562.0
5°	564.8	561.7	558.5	554.3	550.4	544.7	544.1	544.5	544.3	544.1	542.8
7.5°	553.0	549.5	545.4	540.1	535.8	530.3	528.8	528.3	526.6	525.9	524.2
10°	541.7	537.5	532.1	525.7	519.8	513.5	509.6	507.4	504.5	501.5	498.9
12.5°	529.0	523.5	516.6	508.9	499.1	492.1	486.2	482.5	478.6	473.3	469.6
15°	515.5	504.3	496.0	483.6	471.6	469.2	460.2	448.4	447.6	422.0	413.1
17.5°	497.3	488.2	472.7	456.5	440.1	426.8	427.0	395.2	385.3	385.1	369.4
20°	478.6	465.9	448.0	431.6	414.4	386.9	365.0	354.6	338.6	332.5	323.6
22.5°	456.5	439.9	419.0	396.7	372.7	350.4	329.0	319.0	310.9	304.1	300.4
25°	430.3	413.5	388.4	360.7	333.8	313.1	301.3	296.7	282.9	278.1	273.6
27.5°	403.9	385.6	352.8	326.2	304.1	289.9	277.7	270.1	263.5	251.3	245.8
30°	378.8	349.3	322.2	297.8	281.2	267.9	258.9	243.4	234.3	228.6	226.2
32.5°	351.5	320.1	295.6	274.4	257.4	245.8	232.5	222.0	217.9	210.5	199.8
35°	323.6	295.0	269.4	252.4	237.8	222.0	213.7	203.7	193.2	187.5	186.7
37.5°	296.5	269.4	251.1	233.2	215.5	206.3	194.1	183.4	179.7	174.4	168.8
40°	272.0	248.9	231.9	211.3	200.6	186.4	177.1	171.6	162.7	160.7	158.9
42.5°	251.9	232.1	212.9	194.5	182.1	170.7	162.4	156.1	153.3	148.5	146.9
45°	231.6	213.3	193.7	179.2	165.1	155.4	149.8	144.3	141.0	139.7	137.1
47.5°	213.3	195.4	177.3	159.6	150.0	143.7	137.3	134.5	132.5	129.7	128.2
50°	195.8	176.0	158.9	147.8	137.5	131.9	127.7	125.1	122.0	119.0	114.6
52.5°	178.2	161.1	144.7	133.0	125.3	121.6	117.7	114.8	108.7	102.8	99.1
55°	160.2	142.8	129.5	120.5	115.1	111.1	106.5	98.2	92.6	89.3	87.5
57.5°	144.1	128.4	116.6	109.2	105.2	98.7	90.6	85.4	82.5	81.2	80.3
60°	126.8	113.3	103.5	97.8	91.7	83.0	78.6	76.0	75.1	74.7	74.0
62.5°	112.0	100.0	92.4	86.0	77.3	72.7	70.3	69.0	69.0	68.3	67.9
65°	96.3	86.9	80.3	71.2	66.6	64.6	63.8	63.1	62.4	62.2	61.3
67.5°	83.4	75.1	66.6	61.8	58.9	57.9	57.0	56.8	55.9	55.2	54.6
70°	70.3	62.2	55.2	53.1	51.5	51.1	50.2	49.3	48.7	47.8	47.4
72.5°	57.2	49.6	47.2	46.1	44.5	43.9	42.8	42.1	41.0	40.6	40.2
75°	43.7	40.6	39.3	38.4	37.3	35.8	35.4	34.7	34.3	33.6	33.0
77.5°	34.7	33.0	31.4	30.3	29.5	28.4	27.5	27.3	26.9	26.2	26.0
80°	26.0	24.7	24.0	22.9	21.8	21.2	20.7	20.5	19.9	19.6	19.4
82.5°	17.9	16.8	16.4	15.1	14.6	14.6	14.4	14.0	13.5	13.3	13.1
85°	10.0	9.6	9.0	9.2	8.5	8.5	8.3	8.1	7.9	7.6	7.4
87.5°	3.9	3.7	3.5	3.3	3.3	2.6	2.6	2.6	2.8	2.6	2.4
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: P242225

CATALOG NUMBER: S121RDR-S305D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	580.7	580.7	580.7	580.7
2.5°	562.6	563.1	561.5	560.7
5°	542.8	542.1	541.2	540.6
7.5°	522.4	521.8	521.8	519.2
10°	497.8	496.0	494.7	492.5
12.5°	466.3	463.7	462.8	460.2
15°	407.0	401.5	397.8	404.3
17.5°	365.7	351.5	352.6	347.1
20°	323.3	317.7	320.5	312.2
22.5°	295.8	292.3	289.1	287.3
25°	270.3	266.1	261.1	262.9
27.5°	238.2	238.2	234.9	236.2
30°	221.8	220.1	214.6	215.7
32.5°	196.3	194.1	193.4	193.9
35°	184.0	180.6	179.5	178.2
37.5°	167.0	165.7	165.9	165.1
40°	155.7	154.6	153.3	153.7
42.5°	145.8	145.2	143.9	144.1
45°	136.2	135.6	134.9	134.9
47.5°	125.5	124.2	123.1	121.8
50°	111.6	108.9	107.0	106.1
52.5°	96.5	95.2	93.9	93.9
55°	86.9	86.2	85.8	85.6
57.5°	80.1	79.7	79.7	79.0
60°	74.0	74.0	73.8	74.2
62.5°	68.1	67.5	67.7	67.7
65°	61.3	61.1	60.9	60.7
67.5°	54.1	53.9	54.1	53.7
70°	46.9	46.9	46.7	46.3
72.5°	39.5	40.0	39.5	39.3
75°	32.5	32.3	32.5	31.9
77.5°	26.0	25.1	25.5	25.8
80°	19.2	19.2	19.0	18.8
82.5°	12.9	13.1	12.7	12.7
85°	7.4	7.4	7.0	7.4
87.5°	2.2	2.2	2.2	2.6
90°	0.0	0.0	0.0	0.0

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