

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: P242220

Luminaire Tested: **S121RDR-S305D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242220  
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-S305D830-X4F0-XX-UDD-A-W  
Description: DEFINE 1 REGRESSED 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: 991.7 lumens  
Efficiency: N/A  
Efficacy: 85.5 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

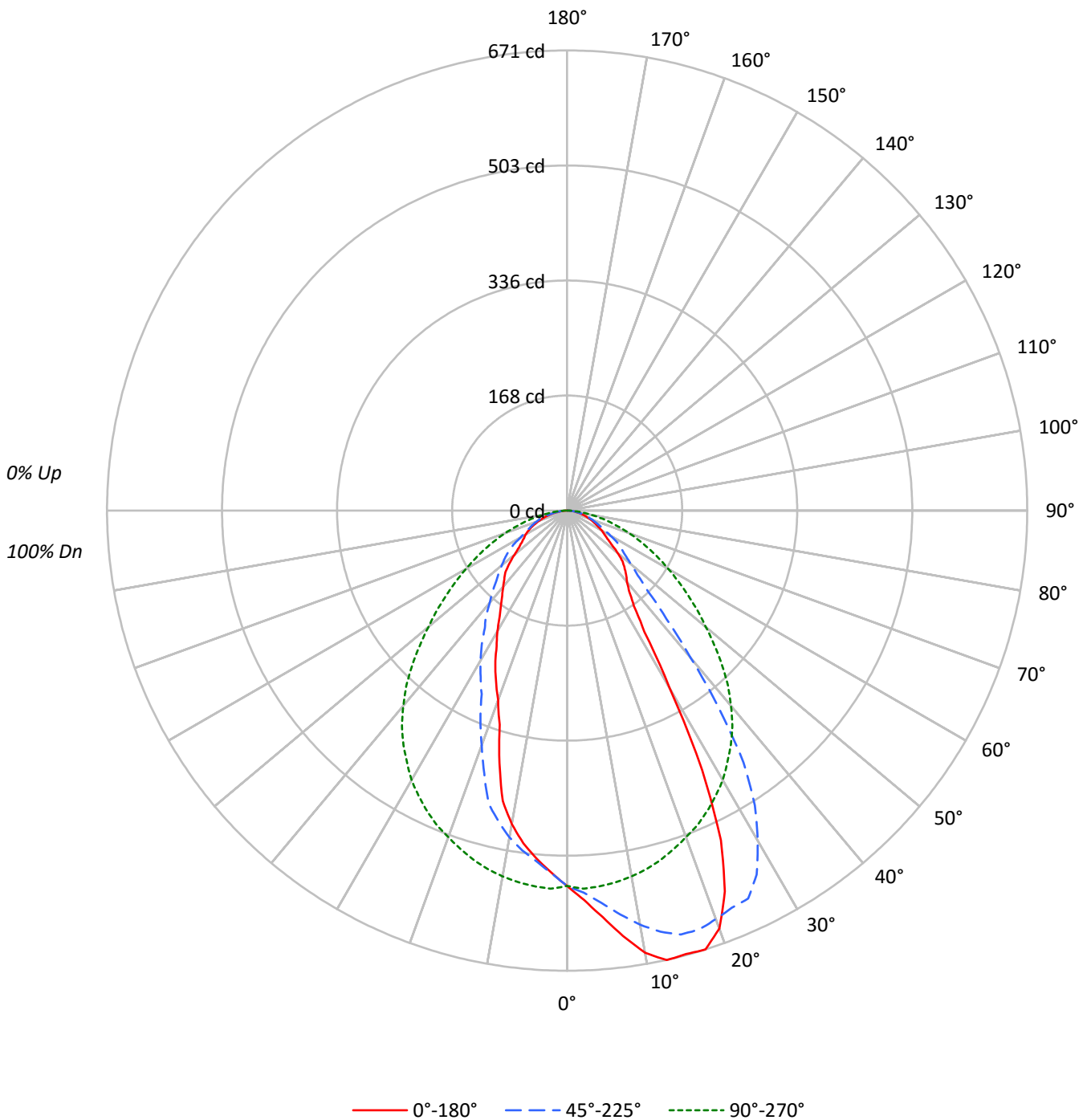
Input Watts (W): 11.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	16219	16219	16219
5°	17700	16359	15154
10°	19701	16295	13966
15°	20540	16172	11690
20°	20451	15980	9280
25°	17344	15804	8101
30°	10209	15529	6956
35°	6135	15058	6073
40°	5253	14373	5605
45°	4965	13400	5330
50°	4439	12169	4610
55°	3699	11106	4169
60°	3437	10122	4148
65°	3176	9219	4010
70°	2997	8308	3777
75°	2828	7350	3434
80°	2525	6143	3020
85°	2380	4827	2380



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	52.5	5.3
10°-20°	149.5	15.1
20°-30°	204.2	20.6
30°-40°	190.2	19.2
40°-50°	157.3	15.9
50°-60°	116.0	11.7
60°-70°	74.1	7.5
70°-80°	38.1	3.8
80°-90°	9.8	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°	406.2	41.0
0°-40°	596.4	60.1
0°-60°	869.6	87.7
0°-90°	991.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	991.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	547	547	547	547	547	
5°	595	574	550	513	510	59
15°	670	640	527	442	381	189
25°	530	624	483	295	248	230
35°	170	449	416	209	168	115
45°	118	167	320	146	127	91
55°	72	96	215	105	81	66
65°	45	52	132	61	57	45
75°	25	27	64	34	30	26
85°	7	7	14	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°	547.4	547.4	547.4	547.4	547.4	547.4	547.4	547.4	547.4	547.4	547.4
2.5°	568.4	568.0	568.6	568.2	567.7	566.7	565.9	563.4	559.7	557.7	559.7
5°	595.1	596.8	596.1	595.3	593.5	591.8	588.1	585.9	579.3	574.1	575.6
7.5°	625.6	627.6	625.0	623.1	622.1	617.3	613.2	606.8	599.6	593.9	590.6
10°	654.8	655.4	654.6	652.9	649.4	644.3	638.3	631.1	622.1	613.2	607.3
12.5°	671.3	672.3	673.5	670.6	668.0	663.8	657.7	650.5	639.4	629.1	622.3
15°	669.6	670.4	672.7	671.7	670.4	668.6	665.1	659.1	651.3	640.0	630.3
17.5°	670.8	671.5	672.5	668.8	666.7	664.5	659.9	655.8	649.2	640.4	633.2
20°	648.6	658.7	657.5	662.4	664.5	664.3	659.9	652.1	643.1	634.0	630.7
22.5°	600.9	608.9	609.9	617.5	627.0	634.6	644.1	647.6	640.6	627.0	622.5
25°	530.5	536.3	542.0	552.9	563.0	584.2	603.6	618.2	626.2	624.3	615.5
27.5°	426.4	420.2	443.0	455.6	483.8	514.7	541.8	568.6	581.3	598.4	607.1
30°	298.4	297.8	315.0	336.9	379.0	407.4	458.3	501.3	534.8	555.8	579.3
32.5°	209.5	212.6	225.3	238.7	262.0	308.3	347.2	406.4	463.6	509.5	538.3
35°	169.6	170.0	172.9	180.9	195.1	220.8	251.1	308.7	386.2	448.6	491.6
37.5°	148.6	149.8	150.6	155.2	160.3	171.2	190.3	230.3	294.5	364.0	438.7
40°	135.8	136.8	137.7	139.1	142.2	147.3	159.9	179.0	216.1	280.1	363.2
42.5°	127.2	126.8	128.6	129.2	130.9	133.8	139.3	149.6	171.0	214.4	286.0
45°	118.5	119.1	119.1	120.0	121.4	123.1	125.3	131.7	142.6	167.3	223.5
47.5°	109.5	109.3	110.5	111.1	112.6	114.0	115.6	118.9	125.3	139.7	172.2
50°	96.3	96.7	99.0	101.0	103.1	104.9	107.0	109.1	113.2	121.0	141.0
52.5°	82.3	82.3	84.8	86.2	89.1	93.6	97.1	100.2	102.9	106.8	118.7
55°	71.6	71.8	72.6	73.9	75.9	78.2	82.7	88.1	92.6	95.9	102.5
57.5°	64.2	64.4	64.6	65.6	66.7	67.5	70.2	74.3	80.3	86.2	90.1
60°	58.0	57.8	57.8	58.4	59.3	60.3	61.7	63.4	66.7	73.1	80.0
62.5°	51.0	51.4	51.4	52.1	52.7	53.7	54.3	56.0	57.8	60.7	67.9
65°	45.3	45.7	45.3	45.9	46.3	46.9	47.9	48.8	50.4	52.3	55.1
67.5°	39.5	39.7	40.1	40.3	40.7	41.0	41.8	42.8	43.8	45.1	47.3
70°	34.6	34.6	34.6	35.0	35.4	35.4	36.0	36.4	37.5	38.7	39.9
72.5°	29.2	29.4	29.4	29.2	30.0	30.2	30.5	30.9	31.7	32.7	33.7
75°	24.7	24.3	24.3	24.5	25.1	25.1	25.3	25.5	26.1	27.0	27.6
77.5°	19.3	19.3	19.5	19.8	20.0	20.0	20.4	20.4	21.2	21.6	22.0
80°	14.8	15.2	15.4	15.2	15.2	15.4	15.4	15.8	16.1	16.3	16.7
82.5°	11.1	11.3	10.9	10.9	11.1	11.1	11.3	11.3	11.5	11.7	11.7
85°	7.0	7.0	7.2	7.0	7.2	7.0	7.0	7.4	7.2	7.2	7.4
87.5°	3.3	3.5	3.3	3.5	3.3	3.5	3.5	3.5	3.5	3.5	3.3
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°	547.4	547.4	547.4	547.4	547.4	547.4	547.4	547.4	547.4	547.4	547.4
2.5°	559.1	558.9	557.9	555.6	554.0	550.9	550.9	551.9	546.6	542.8	542.6
5°	572.1	570.0	566.5	562.2	558.3	552.9	550.9	550.0	542.8	537.3	535.4
7.5°	585.9	580.7	574.7	567.7	561.2	553.5	549.6	546.6	537.3	530.5	526.4
10°	600.3	592.0	582.8	572.7	563.6	553.3	547.0	541.6	530.9	521.4	516.7
12.5°	613.0	601.5	589.8	576.6	564.2	551.3	542.4	535.4	522.9	511.6	505.8
15°	619.0	606.6	597.0	578.9	562.2	549.0	537.7	527.2	513.8	501.3	492.4
17.5°	624.1	610.5	597.8	580.7	561.4	544.3	530.7	517.3	502.9	489.8	478.8
20°	622.7	611.2	595.5	577.4	559.1	539.3	523.9	506.8	488.9	475.6	464.0
22.5°	614.5	605.0	588.7	571.5	553.8	532.6	515.1	496.5	474.5	459.9	447.0
25°	604.0	594.9	578.9	561.0	543.5	522.9	502.3	483.4	459.7	442.2	425.6
27.5°	595.7	582.2	566.1	546.1	529.3	509.7	488.1	469.0	443.5	424.1	404.8
30°	586.3	570.8	551.1	529.9	512.0	494.1	473.1	453.9	425.8	403.7	379.7
32.5°	559.1	559.3	535.9	512.2	493.0	473.9	455.2	434.8	406.8	380.9	356.2
35°	523.7	537.5	520.2	493.0	469.4	451.7	436.3	416.3	385.2	358.5	330.5
37.5°	476.4	500.7	502.7	474.5	448.4	427.6	412.4	395.7	364.4	335.6	307.8
40°	429.1	461.2	473.9	454.4	426.0	402.1	386.9	371.6	342.2	311.1	285.4
42.5°	371.0	423.1	438.9	433.2	402.7	377.0	360.9	347.2	318.5	288.1	262.6
45°	305.6	376.0	399.0	405.0	379.3	351.7	333.2	319.8	294.7	267.9	241.4
47.5°	245.5	322.9	360.9	367.1	353.5	326.8	305.6	291.6	271.6	248.6	222.2
50°	187.3	266.5	321.0	330.5	327.2	300.0	280.5	264.0	248.8	228.2	203.5
52.5°	149.0	213.0	277.8	295.5	296.5	275.1	254.5	239.5	224.7	208.5	186.0
55°	118.9	164.6	230.3	260.3	263.2	248.4	229.4	215.0	203.9	188.7	169.8
57.5°	100.2	127.4	184.4	224.9	226.2	222.0	203.9	192.0	182.7	169.6	152.9
60°	85.6	101.0	142.2	189.5	195.7	195.7	181.3	170.8	161.9	152.1	136.2
62.5°	74.1	82.5	107.8	150.6	166.5	168.9	159.9	150.6	144.0	134.2	119.6
65°	62.4	68.7	83.5	116.5	138.3	142.8	138.3	131.5	126.3	116.1	104.5
67.5°	51.2	57.4	66.7	88.3	112.1	117.7	116.9	113.4	108.0	100.4	88.3
70°	42.4	46.1	52.9	65.4	88.1	96.5	99.0	95.9	91.2	82.9	74.1
72.5°	35.0	37.9	41.2	50.2	65.8	77.0	81.1	79.4	75.9	68.1	60.7
75°	28.6	30.5	32.7	37.0	47.3	59.9	64.6	64.2	60.7	54.1	48.2
77.5°	23.0	23.7	25.3	28.0	33.1	44.4	48.2	49.4	46.7	41.2	36.4
80°	17.3	18.1	18.9	20.4	22.8	29.4	34.2	36.0	33.7	30.5	25.7
82.5°	12.1	12.3	13.2	14.0	15.2	17.9	22.8	24.9	22.8	19.3	17.9
85°	7.6	7.4	7.6	7.8	9.1	9.7	12.8	14.2	13.8	11.7	10.1
87.5°	3.5	3.5	3.3	3.5	3.3	3.9	4.5	6.6	4.9	4.3	3.9
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°	547.4	547.4	547.4	547.4	547.4	547.4	547.4	547.4	547.4	547.4	547.4
2.5°	541.0	540.4	538.3	535.4	533.0	528.9	528.9	529.9	529.7	530.1	529.7
5°	532.4	529.5	526.4	522.5	518.8	513.4	512.8	513.2	513.0	512.8	511.6
7.5°	521.2	517.9	514.0	509.1	505.0	499.8	498.4	498.0	496.3	495.7	494.1
10°	510.5	506.6	501.5	495.5	490.0	484.0	480.3	478.2	475.6	472.7	470.2
12.5°	498.6	493.5	486.9	479.7	470.4	463.8	458.3	454.8	451.1	446.1	442.6
15°	485.8	475.4	467.5	455.8	444.5	442.2	433.8	422.7	421.8	397.8	389.3
17.5°	468.8	460.1	445.5	430.3	414.9	402.3	402.5	372.5	363.2	363.0	348.2
20°	451.1	439.1	422.3	406.8	390.6	364.6	344.1	334.2	319.2	313.4	305.0
22.5°	430.3	414.6	394.9	373.9	351.3	330.3	310.1	300.6	293.0	286.7	283.2
25°	405.6	389.7	366.1	339.9	314.6	295.1	284.0	279.7	266.7	262.2	257.8
27.5°	380.7	363.4	332.5	307.4	286.7	273.3	261.8	254.5	248.4	236.9	231.7
30°	357.0	329.2	303.7	280.7	265.0	252.5	244.1	229.4	220.8	215.5	213.2
32.5°	331.3	301.7	278.6	258.7	242.6	231.7	219.2	209.3	205.4	198.4	188.3
35°	305.0	278.0	253.9	237.9	224.1	209.3	201.5	192.0	182.1	176.8	175.9
37.5°	279.4	253.9	236.6	219.8	203.1	194.5	182.9	172.9	169.4	164.4	159.1
40°	256.4	234.6	218.5	199.2	189.1	175.7	166.9	161.7	153.3	151.5	149.8
42.5°	237.5	218.7	200.6	183.3	171.6	160.9	153.1	147.1	144.5	139.9	138.5
45°	218.3	201.0	182.5	168.9	155.6	146.5	141.2	136.0	132.9	131.7	129.2
47.5°	201.0	184.2	167.1	150.4	141.4	135.4	129.4	126.8	124.9	122.2	120.8
50°	184.6	165.9	149.8	139.3	129.6	124.3	120.4	117.9	115.0	112.1	108.0
52.5°	167.9	151.9	136.4	125.3	118.1	114.6	110.9	108.2	102.5	96.9	93.4
55°	151.0	134.6	122.0	113.6	108.4	104.7	100.4	92.6	87.3	84.2	82.5
57.5°	135.8	121.0	109.9	102.9	99.2	93.0	85.4	80.5	77.8	76.6	75.7
60°	119.6	106.8	97.5	92.2	86.4	78.2	74.1	71.6	70.8	70.4	69.8
62.5°	105.6	94.2	87.0	81.1	72.8	68.5	66.3	65.0	65.0	64.4	64.0
65°	90.7	81.9	75.7	67.1	62.8	60.9	60.1	59.5	58.9	58.6	57.8
67.5°	78.6	70.8	62.8	58.2	55.6	54.5	53.7	53.5	52.7	52.1	51.4
70°	66.3	58.6	52.1	50.0	48.6	48.2	47.3	46.5	45.9	45.1	44.7
72.5°	53.9	46.7	44.4	43.4	42.0	41.4	40.3	39.7	38.7	38.3	37.9
75°	41.2	38.3	37.0	36.2	35.2	33.7	33.3	32.7	32.3	31.7	31.1
77.5°	32.7	31.1	29.6	28.6	27.8	26.8	25.9	25.7	25.3	24.7	24.5
80°	24.5	23.3	22.6	21.6	20.6	20.0	19.5	19.3	18.7	18.5	18.3
82.5°	16.9	15.8	15.4	14.2	13.8	13.8	13.6	13.2	12.8	12.6	12.3
85°	9.5	9.1	8.4	8.6	8.0	8.0	7.8	7.6	7.4	7.2	7.0
87.5°	3.7	3.5	3.3	3.1	3.1	2.5	2.5	2.5	2.7	2.5	2.3
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: P242220

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**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	547.4	547.4	547.4	547.4
2.5°	530.3	530.7	529.3	528.4
5°	511.6	511.0	510.1	509.5
7.5°	492.4	491.8	491.8	489.3
10°	469.2	467.5	466.3	464.2
12.5°	439.5	437.1	436.3	433.8
15°	383.6	378.4	374.9	381.1
17.5°	344.7	331.3	332.3	327.2
20°	304.8	299.4	302.1	294.3
22.5°	278.8	275.5	272.5	270.8
25°	254.8	250.8	246.1	247.8
27.5°	224.5	224.5	221.4	222.7
30°	209.1	207.4	202.3	203.3
32.5°	185.0	182.9	182.3	182.7
35°	173.5	170.2	169.2	167.9
37.5°	157.4	156.2	156.4	155.6
40°	146.7	145.7	144.5	144.9
42.5°	137.5	136.8	135.6	135.8
45°	128.4	127.8	127.2	127.2
47.5°	118.3	117.1	116.1	114.8
50°	105.2	102.7	100.8	100.0
52.5°	91.0	89.7	88.5	88.5
55°	81.9	81.3	80.9	80.7
57.5°	75.5	75.1	75.1	74.5
60°	69.8	69.8	69.6	70.0
62.5°	64.2	63.6	63.8	63.8
65°	57.8	57.6	57.4	57.2
67.5°	51.0	50.8	51.0	50.6
70°	44.2	44.2	44.0	43.6
72.5°	37.2	37.7	37.2	37.0
75°	30.7	30.5	30.7	30.0
77.5°	24.5	23.7	24.1	24.3
80°	18.1	18.1	17.9	17.7
82.5°	12.1	12.3	11.9	11.9
85°	7.0	7.0	6.6	7.0
87.5°	2.1	2.1	2.1	2.5
90°	0.0	0.0	0.0	0.0

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