

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: P242216

Luminaire Tested: **S121RDR-S490D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242216
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-S490D927-X4F0-XX-UDD-A-W
Description: DEFINE 1 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1370.7 lumens
Efficiency: N/A
Efficacy: 72.9 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

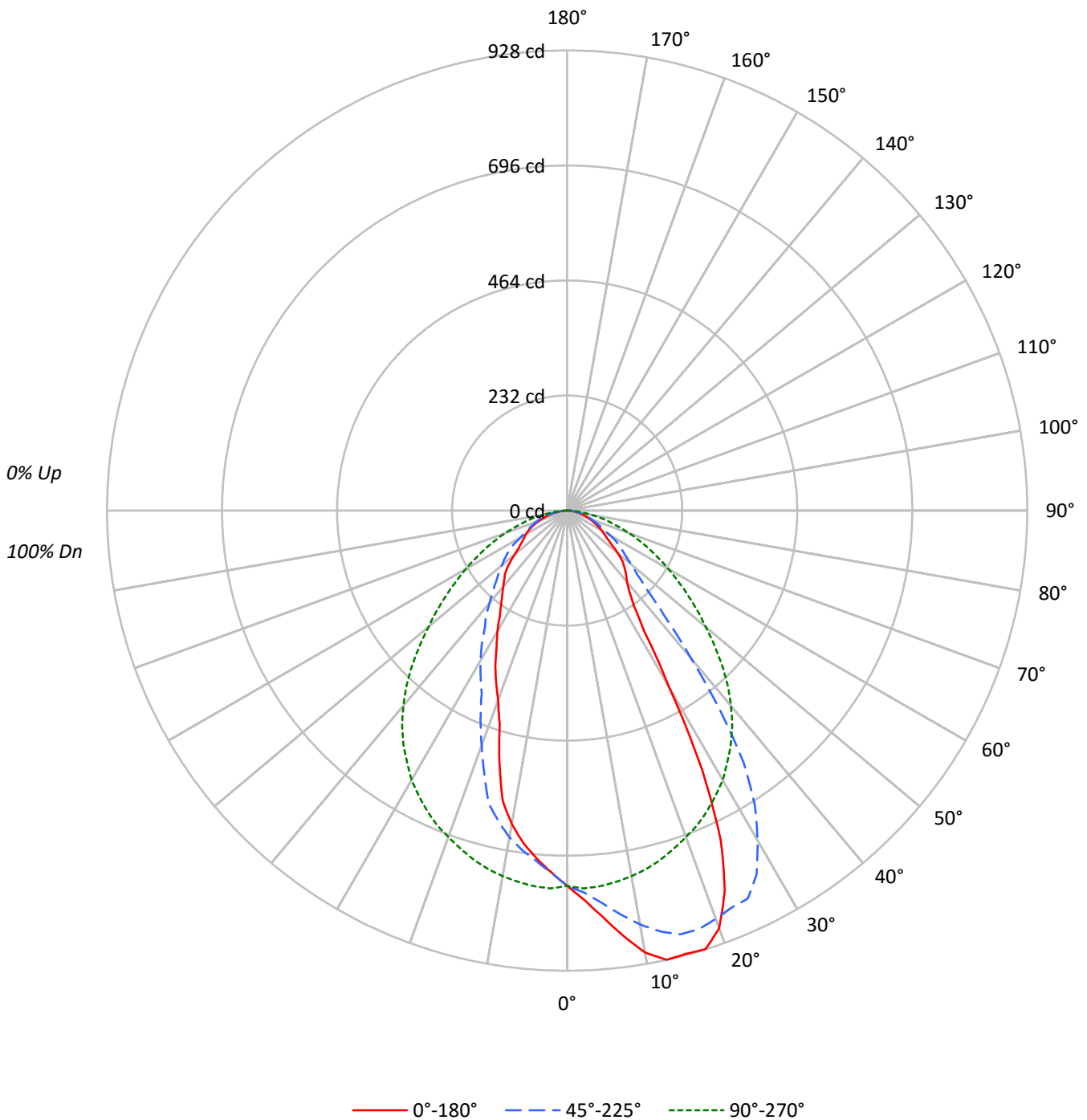
Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	22418	22418	22418
5°	24464	22614	20945
10°	27229	22523	19307
15°	28390	22353	16156
20°	28268	22088	12824
25°	23970	21842	11194
30°	14110	21466	9614
35°	8479	20813	8395
40°	7260	19869	7744
45°	6864	18521	7366
50°	6135	16820	6370
55°	5114	15353	5760
60°	4753	13991	5730
65°	4389	12739	5546
70°	4141	11479	5224
75°	3904	10154	4751
80°	3498	8497	4180
85°	3298	6663	3298



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	72.5	5.3
10°-20°	206.6	15.1
20°-30°	282.2	20.6
30°-40°	262.9	19.2
40°-50°	217.4	15.9
50°-60°	160.3	11.7
60°-70°	102.5	7.5
70°-80°	52.7	3.8
80°-90°	13.6	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°	561.4	41.0
0°-40°	824.3	60.1
0°-60°	1202.0	87.7
0°-90°	1370.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1370.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	757	757	757	757	757	
5°	822	794	760	710	704	81
15°	926	884	729	611	527	261
25°	733	863	668	408	342	318
35°	234	620	575	289	232	159
45°	164	231	442	202	176	126
55°	99	132	297	145	112	91
65°	63	72	182	84	79	62
75°	34	37	89	47	42	36
85°	10	10	20	11	10	11
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°	756.6	756.6	756.6	756.6	756.6	756.6	756.6	756.6	756.6	756.6	756.6
2.5°	785.6	785.0	785.9	785.3	784.7	783.3	782.2	778.7	773.6	770.8	773.6
5°	822.5	824.8	824.0	822.8	820.3	818.0	812.9	809.7	800.6	793.5	795.5
7.5°	864.6	867.5	863.8	861.2	859.8	853.3	847.6	838.8	828.8	820.8	816.3
10°	905.0	905.9	904.7	902.5	897.6	890.5	882.3	872.3	859.8	847.6	839.3
12.5°	927.8	929.2	930.9	926.9	923.2	917.5	909.0	899.1	883.7	869.5	860.1
15°	925.5	926.6	929.8	928.3	926.6	924.1	919.2	911.0	900.2	884.5	871.2
17.5°	927.2	928.1	929.5	924.4	921.5	918.4	912.1	906.4	897.3	885.1	875.2
20°	896.5	910.4	908.7	915.5	918.4	918.1	912.1	901.3	888.8	876.3	871.7
22.5°	830.5	841.6	843.0	853.5	866.6	877.2	890.2	895.1	885.4	866.6	860.4
25°	733.2	741.2	749.2	764.2	778.2	807.5	834.2	854.4	865.5	862.9	850.7
27.5°	589.3	580.8	612.4	629.7	668.7	711.3	748.9	785.9	803.5	827.1	839.0
30°	412.4	411.6	435.4	465.6	523.9	563.2	633.4	692.8	739.2	768.2	800.6
32.5°	289.5	293.8	311.4	329.9	362.1	426.1	479.8	561.7	640.8	704.2	744.0
35°	234.4	234.9	238.9	250.0	269.6	305.2	347.0	426.6	533.9	620.0	679.5
37.5°	205.4	207.1	208.2	214.5	221.6	236.6	263.1	318.3	407.0	503.1	606.4
40°	187.7	189.1	190.3	192.3	196.5	203.6	221.0	247.4	298.6	387.1	502.0
42.5°	175.8	175.2	177.8	178.6	180.9	184.9	192.6	206.8	236.4	296.4	395.3
45°	163.8	164.7	164.7	165.8	167.8	170.1	173.2	182.0	197.1	231.2	308.9
47.5°	151.3	151.0	152.7	153.6	155.6	157.6	159.8	164.4	173.2	193.1	238.1
50°	133.1	133.7	136.8	139.7	142.5	145.1	147.9	150.7	156.4	167.2	194.8
52.5°	113.8	113.8	117.2	119.2	123.2	129.4	134.2	138.5	142.2	147.6	164.1
55°	99.0	99.3	100.4	102.1	105.0	108.1	114.3	121.7	128.0	132.5	141.6
57.5°	88.7	89.0	89.3	90.7	92.2	93.3	97.0	102.7	110.9	119.2	124.6
60°	80.2	79.9	79.9	80.8	81.9	83.3	85.3	87.6	92.2	101.0	110.6
62.5°	70.5	71.1	71.1	72.0	72.8	74.2	75.1	77.4	79.9	83.9	93.9
65°	62.6	63.1	62.6	63.4	64.0	64.8	66.3	67.4	69.7	72.2	76.2
67.5°	54.6	54.9	55.5	55.7	56.3	56.6	57.7	59.2	60.6	62.3	65.4
70°	47.8	47.8	47.8	48.4	48.9	48.9	49.8	50.3	51.8	53.5	55.2
72.5°	40.4	40.7	40.7	40.4	41.5	41.8	42.1	42.7	43.8	45.2	46.6
75°	34.1	33.6	33.6	33.8	34.7	34.7	35.0	35.3	36.1	37.3	38.1
77.5°	26.7	26.7	27.0	27.3	27.6	27.6	28.2	28.2	29.3	29.9	30.4
80°	20.5	21.0	21.3	21.0	21.0	21.3	21.3	21.9	22.2	22.5	23.0
82.5°	15.4	15.6	15.1	15.1	15.4	15.4	15.6	15.6	15.9	16.2	16.2
85°	9.7	9.7	10.0	9.7	10.0	9.7	9.7	10.2	10.0	10.0	10.2
87.5°	4.6	4.8	4.6	4.8	4.6	4.8	4.8	4.8	4.8	4.8	4.6
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°	756.6	756.6	756.6	756.6	756.6	756.6	756.6	756.6	756.6	756.6	756.6
2.5°	772.8	772.5	771.1	767.9	765.7	761.4	761.4	762.8	755.4	750.3	750.0
5°	790.7	787.8	783.0	777.0	771.6	764.2	761.4	760.3	750.3	742.6	740.1
7.5°	809.7	802.6	794.4	784.7	775.6	765.1	759.7	755.4	742.6	733.2	727.5
10°	829.7	818.3	805.5	791.5	779.0	764.8	756.0	748.6	733.8	720.7	714.2
12.5°	847.3	831.4	815.1	796.9	779.9	762.0	749.7	740.1	722.7	707.1	699.1
15°	855.5	838.5	825.1	800.1	777.0	758.8	743.2	728.7	710.2	692.8	680.6
17.5°	862.6	843.9	826.2	802.6	775.9	752.3	733.5	715.0	695.1	676.9	661.8
20°	860.7	844.7	823.1	798.1	772.8	745.5	724.1	700.5	675.8	657.3	641.4
22.5°	849.3	836.2	813.7	789.8	765.4	736.1	711.9	686.3	655.9	635.7	617.8
25°	834.8	822.3	800.1	775.3	751.2	722.7	694.3	668.1	635.4	611.2	588.2
27.5°	823.4	804.6	782.4	754.9	731.5	704.5	674.6	648.2	612.9	586.2	559.5
30°	810.3	789.0	761.7	732.4	707.6	682.9	653.9	627.4	588.5	558.0	524.8
32.5°	772.8	773.1	740.6	707.9	681.5	655.0	629.1	601.0	562.3	526.5	492.3
35°	723.8	742.9	719.0	681.5	648.8	624.3	603.0	575.4	532.4	495.5	456.8
37.5°	658.4	692.0	694.8	655.9	619.8	591.0	570.0	546.9	503.7	463.9	425.5
40°	593.0	637.4	655.0	628.0	588.7	555.8	534.7	513.7	473.0	430.0	394.5
42.5°	512.8	584.8	606.7	598.7	556.6	521.1	498.9	479.8	440.3	398.2	362.9
45°	422.4	519.6	551.5	559.7	524.2	486.1	460.5	442.0	407.3	370.3	333.6
47.5°	339.3	446.3	498.9	507.4	488.6	451.7	422.4	403.0	375.4	343.6	307.2
50°	258.8	368.3	443.7	456.8	452.2	414.7	387.7	364.9	343.9	315.4	281.3
52.5°	205.9	294.4	384.0	408.4	409.8	380.3	351.8	331.1	310.6	288.1	257.1
55°	164.4	227.5	318.3	359.8	363.8	343.3	317.1	297.2	281.9	260.8	234.6
57.5°	138.5	176.1	254.8	310.9	312.6	306.9	281.9	265.4	252.6	234.4	211.3
60°	118.3	139.7	196.5	262.0	270.5	270.5	250.6	236.1	223.8	210.2	188.3
62.5°	102.4	114.1	149.0	208.2	230.1	233.5	221.0	208.2	199.1	185.4	165.2
65°	86.2	95.0	115.5	161.0	191.1	197.4	191.1	181.7	174.6	160.4	144.5
67.5°	70.8	79.4	92.2	122.0	155.0	162.7	161.6	156.7	149.3	138.8	122.0
70°	58.6	63.7	73.1	90.4	121.7	133.4	136.8	132.5	126.0	114.6	102.4
72.5°	48.4	52.3	56.9	69.4	91.0	106.4	112.1	109.8	105.0	94.1	83.9
75°	39.5	42.1	45.2	51.2	65.4	82.8	89.3	88.7	83.9	74.8	66.6
77.5°	31.9	32.7	35.0	38.7	45.8	61.4	66.6	68.3	64.6	56.9	50.3
80°	23.9	25.0	26.2	28.2	31.6	40.7	47.2	49.8	46.6	42.1	35.6
82.5°	16.8	17.1	18.2	19.3	21.0	24.7	31.6	34.4	31.6	26.7	24.7
85°	10.5	10.2	10.5	10.8	12.5	13.4	17.6	19.6	19.1	16.2	13.9
87.5°	4.8	4.8	4.6	4.8	4.6	5.4	6.3	9.1	6.8	6.0	5.4
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°	756.6	756.6	756.6	756.6	756.6	756.6	756.6	756.6	756.6	756.6	756.6
2.5°	747.7	746.9	744.0	740.1	736.6	731.0	731.0	732.4	732.1	732.7	732.1
5°	735.8	731.8	727.5	722.1	717.0	709.6	708.8	709.3	709.1	708.8	707.1
7.5°	720.4	715.9	710.5	703.7	698.0	690.9	688.9	688.3	686.0	685.2	682.9
10°	705.6	700.2	693.1	684.9	677.2	669.0	663.8	661.0	657.3	653.3	649.9
12.5°	689.1	682.0	672.9	663.0	650.2	641.1	633.4	628.6	623.4	616.6	611.8
15°	671.5	657.0	646.2	630.0	614.3	611.2	599.6	584.2	583.1	549.8	538.1
17.5°	647.9	636.0	615.8	594.7	573.4	556.0	556.3	514.8	502.0	501.7	481.2
20°	623.4	607.0	583.6	562.3	539.8	504.0	475.5	461.9	441.1	433.2	421.5
22.5°	594.7	573.1	545.8	516.8	485.5	456.5	428.6	415.5	405.0	396.2	391.4
25°	560.6	538.7	506.0	469.9	434.9	407.9	392.5	386.5	368.6	362.4	356.4
27.5°	526.2	502.3	459.6	424.9	396.2	377.7	361.8	351.8	343.3	327.4	320.3
30°	493.5	455.1	419.8	387.9	366.3	349.0	337.3	317.1	305.2	297.8	294.7
32.5°	457.9	417.0	385.1	357.5	335.3	320.3	302.9	289.3	283.9	274.2	260.2
35°	421.5	384.3	351.0	328.8	309.7	289.3	278.4	265.4	251.7	244.3	243.2
37.5°	386.2	351.0	327.1	303.8	280.7	268.8	252.8	238.9	234.1	227.3	219.9
40°	354.4	324.2	302.1	275.3	261.4	242.9	230.7	223.6	211.9	209.3	207.1
42.5°	328.2	302.3	277.3	253.4	237.2	222.4	211.6	203.4	199.7	193.4	191.4
45°	301.8	277.9	252.3	233.5	215.0	202.5	195.1	188.0	183.7	182.0	178.6
47.5°	277.9	254.6	230.9	207.9	195.4	187.1	178.9	175.2	172.6	168.9	167.0
50°	255.1	229.2	207.1	192.6	179.2	171.8	166.4	163.0	159.0	155.0	149.3
52.5°	232.1	209.9	188.6	173.2	163.3	158.4	153.3	149.6	141.6	134.0	129.1
55°	208.8	186.0	168.7	157.0	149.9	144.8	138.8	128.0	120.6	116.3	114.1
57.5°	187.7	167.2	151.9	142.2	137.1	128.6	118.0	111.2	107.5	105.8	104.7
60°	165.2	147.6	134.8	127.4	119.5	108.1	102.4	99.0	97.8	97.3	96.4
62.5°	145.9	130.3	120.3	112.1	100.7	94.7	91.6	89.9	89.9	89.0	88.5
65°	125.4	113.2	104.7	92.7	86.7	84.2	83.1	82.2	81.3	81.1	79.9
67.5°	108.6	97.8	86.7	80.5	76.8	75.4	74.2	73.9	72.8	72.0	71.1
70°	91.6	81.1	72.0	69.1	67.1	66.6	65.4	64.3	63.4	62.3	61.7
72.5°	74.5	64.6	61.4	60.0	58.0	57.2	55.7	54.9	53.5	52.9	52.3
75°	56.9	52.9	51.2	50.1	48.6	46.6	46.1	45.2	44.7	43.8	42.9
77.5°	45.2	42.9	41.0	39.5	38.4	37.0	35.8	35.6	35.0	34.1	33.8
80°	33.8	32.1	31.3	29.9	28.4	27.6	27.0	26.7	25.9	25.6	25.3
82.5°	23.3	21.9	21.3	19.6	19.1	19.1	18.8	18.2	17.6	17.3	17.1
85°	13.1	12.5	11.7	11.9	11.1	11.1	10.8	10.5	10.2	10.0	9.7
87.5°	5.1	4.8	4.6	4.3	4.3	3.4	3.4	3.4	3.7	3.4	3.1
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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CATALOG NUMBER: S121RDR-S490D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	756.6	756.6	756.6	756.6
2.5°	732.9	733.5	731.5	730.4
5°	707.1	706.2	705.1	704.2
7.5°	680.6	679.8	679.8	676.4
10°	648.5	646.2	644.5	641.7
12.5°	607.5	604.1	603.0	599.6
15°	530.2	523.0	518.2	526.7
17.5°	476.4	457.9	459.3	452.2
20°	421.2	413.8	417.5	406.7
22.5°	385.4	380.8	376.6	374.3
25°	352.1	346.7	340.2	342.4
27.5°	310.3	310.3	306.0	307.7
30°	289.0	286.7	279.6	281.0
32.5°	255.7	252.8	252.0	252.6
35°	239.8	235.2	233.8	232.1
37.5°	217.6	215.9	216.2	215.0
40°	202.8	201.4	199.7	200.2
42.5°	190.0	189.1	187.4	187.7
45°	177.5	176.6	175.8	175.8
47.5°	163.5	161.8	160.4	158.7
50°	145.3	141.9	139.4	138.2
52.5°	125.7	124.0	122.3	122.3
55°	113.2	112.3	111.8	111.5
57.5°	104.4	103.8	103.8	103.0
60°	96.4	96.4	96.1	96.7
62.5°	88.7	87.9	88.2	88.2
65°	79.9	79.6	79.4	79.1
67.5°	70.5	70.3	70.5	70.0
70°	61.2	61.2	60.9	60.3
72.5°	51.5	52.0	51.5	51.2
75°	42.4	42.1	42.4	41.5
77.5°	33.8	32.7	33.3	33.6
80°	25.0	25.0	24.7	24.5
82.5°	16.8	17.1	16.5	16.5
85°	9.7	9.7	9.1	9.7
87.5°	2.8	2.8	2.8	3.4
90°	0.0	0.0	0.0	0.0

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