

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: P243316

Luminaire Tested: **S123DR-H340D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243316
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-59)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DR-H340D927-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1091.3 lumens
Efficiency: N/A
Efficacy: 97.4 lumens/watt
Spacing Criteria (0/90/45): 1.39 / 1.21 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

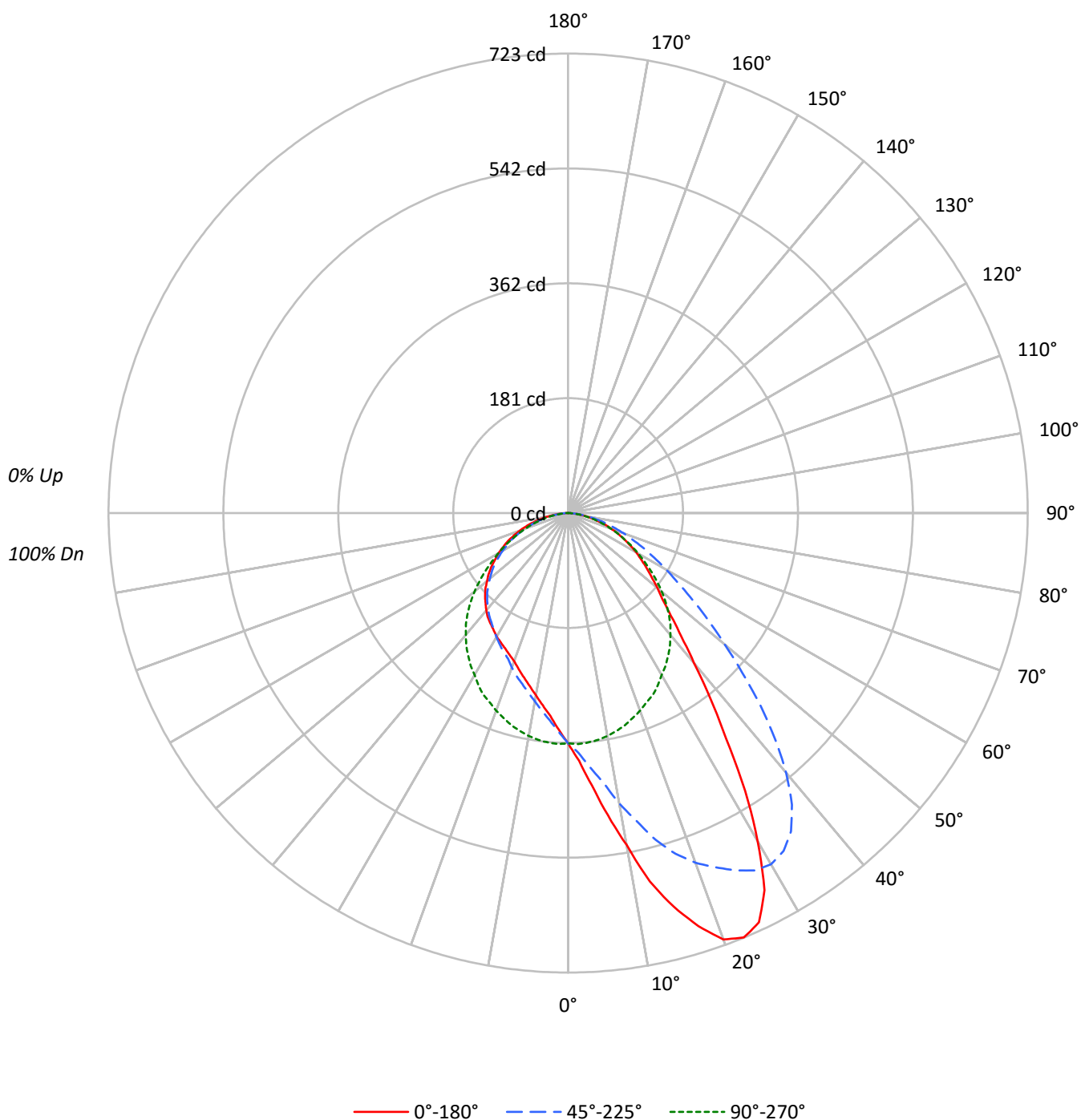
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot



TEST NUMBER: P243316

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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85		
2	100	92	86	81	98	91	85	80	87	82	78	84	80	76	81	77	74	72		
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62		
4	84	73	64	58	82	72	64	58	69	62	57	67	61	56	65	60	55	53		
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	58	53	49	46		
6	72	59	50	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41		
7	67	54	45	39	65	53	45	39	51	44	39	50	43	39	49	43	38	36		
8	62	49	41	35	61	48	41	35	47	40	35	46	39	35	45	39	34	33		
9	58	45	37	32	57	45	37	32	43	36	31	42	36	31	41	35	31	29		
10	55	42	34	29	53	41	34	29	40	33	29	39	33	28	38	33	28	27		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	4389	4389	4389
5°	5230	4410	3897
10°	6531	4383	3584
15°	8048	4336	3362
20°	9210	4267	3199
25°	9504	4220	3140
30°	8350	4119	3142
35°	6409	4057	3146
40°	4875	3959	3169
45°	3922	3831	3166
50°	3451	3626	3140
55°	3183	3360	3119
60°	2999	3074	3055
65°	2788	2811	2997
70°	2552	2520	2867
75°	2267	2196	2669
80°	1899	1815	2338
85°	1335	1321	1752

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.6	3.3
10°-20°	114.4	10.5
20°-30°	188.9	17.3
30°-40°	216.2	19.8
40°-50°	195.9	18.0
50°-60°	158.3	14.5
60°-70°	110.3	10.1
70°-80°	57.8	5.3
80°-90°	13.8	1.3
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°	338.9	31.1
0°-40°	555.1	50.9
0°-60°	909.4	83.3
0°-90°	1091.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1091.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	362	362	362	362	362	
5°	430	402	362	328	320	44
15°	641	533	346	278	268	183
25°	711	620	316	241	235	318
35°	433	611	274	210	213	274
45°	229	427	224	180	185	180
55°	151	240	159	141	148	135
65°	97	131	98	97	104	96
75°	48	60	47	49	57	52
85°	10	12	10	11	13	12
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°	362.1	362.1	362.1	362.1	362.1	362.1	362.1	362.1	362.1	362.1	362.1
2.5°	390.0	390.8	389.5	390.3	388.3	387.2	385.3	384.5	380.5	377.7	376.7
5°	429.8	429.8	430.1	428.1	425.8	421.6	416.2	412.7	408.7	401.9	398.4
7.5°	479.8	477.4	475.7	472.0	468.9	462.1	456.1	449.0	439.7	428.4	422.5
10°	530.6	533.2	531.6	527.8	519.6	508.5	499.7	489.5	475.0	464.1	448.5
12.5°	593.9	590.4	587.8	582.0	573.0	561.2	547.7	532.4	513.8	495.8	478.3
15°	641.3	641.8	641.7	634.0	625.2	609.3	596.7	571.4	547.8	532.6	503.7
17.5°	681.5	683.6	681.1	669.7	661.9	652.4	636.4	608.2	586.8	562.1	530.2
20°	714.0	714.3	710.3	701.8	692.9	682.3	661.1	639.5	618.6	585.5	555.1
22.5°	722.6	723.4	722.6	718.9	711.6	700.4	684.4	664.5	638.2	602.9	574.7
25°	710.6	710.1	713.0	710.8	710.5	706.8	696.4	680.3	654.3	620.3	584.5
27.5°	668.9	665.4	672.5	681.8	683.1	688.9	689.1	681.6	662.9	633.9	594.9
30°	596.6	599.9	603.4	622.8	633.5	648.6	661.7	666.5	659.4	638.0	601.5
32.5°	518.0	528.6	538.4	551.8	567.5	593.1	613.8	632.0	639.8	630.4	601.5
35°	433.1	438.7	454.1	471.2	493.9	513.8	554.9	581.5	605.2	611.3	593.9
37.5°	366.8	371.9	377.2	390.5	416.0	449.2	483.2	518.0	553.1	578.3	577.3
40°	308.1	309.2	313.9	325.3	346.5	376.0	411.7	453.6	499.2	533.6	548.0
42.5°	263.0	263.0	268.8	282.0	294.3	315.9	350.3	387.3	437.2	481.3	512.2
45°	228.8	229.1	233.8	243.2	252.9	269.8	295.3	330.1	381.5	427.1	470.1
47.5°	201.0	204.1	206.8	211.7	221.3	236.3	254.8	284.5	321.2	370.9	421.0
50°	183.0	183.7	185.7	188.7	196.1	205.9	222.0	244.6	277.1	321.2	371.7
52.5°	165.5	165.5	167.5	171.1	175.4	183.4	195.0	213.7	238.1	278.1	323.5
55°	150.6	151.0	151.4	154.4	158.0	164.0	173.1	185.4	207.8	239.8	279.4
57.5°	136.0	137.8	137.3	139.6	142.3	146.6	153.0	163.6	180.7	205.1	240.7
60°	123.7	123.4	124.2	125.2	127.0	130.0	136.0	143.8	158.0	178.4	207.6
62.5°	109.8	109.4	110.4	111.6	113.2	115.7	120.0	126.0	137.3	152.5	177.9
65°	97.2	96.8	97.3	98.0	99.8	101.8	105.1	110.1	117.6	131.0	150.4
67.5°	84.6	84.6	84.9	85.6	86.7	88.2	90.9	93.8	101.3	110.3	125.5
70°	72.0	72.1	72.1	72.8	73.8	74.9	77.1	79.8	84.4	92.4	104.6
72.5°	61.0	61.0	60.7	61.0	61.7	62.2	63.5	66.0	69.5	75.3	84.6
75°	48.4	49.2	49.1	48.9	49.4	50.2	51.4	53.4	55.5	59.7	66.7
77.5°	37.1	37.6	37.6	37.8	38.3	39.0	39.3	41.3	43.3	45.8	50.9
80°	27.2	27.5	27.2	27.4	27.7	28.4	29.0	29.3	30.8	33.0	35.5
82.5°	18.2	17.7	18.4	18.2	18.6	18.7	19.1	19.2	20.2	21.6	23.2
85°	9.6	10.4	10.3	10.6	10.3	10.4	10.6	11.3	11.4	12.3	13.3
87.5°	3.6	4.0	4.0	4.0	4.0	4.0	4.3	4.5	4.8	5.0	5.3
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°	362.1	362.1	362.1	362.1	362.1	362.1	362.1	362.1	362.1	362.1	362.1
2.5°	377.4	375.9	373.7	371.4	368.9	366.4	365.3	363.8	360.8	357.8	355.5
5°	395.6	391.5	385.8	381.7	375.7	370.1	365.6	362.4	357.6	351.8	348.0
7.5°	416.0	408.5	399.6	390.5	381.5	373.1	366.1	360.1	352.7	345.5	339.7
10°	440.0	425.6	413.2	399.9	386.7	374.7	364.8	356.1	346.5	337.9	330.8
12.5°	461.3	444.5	427.3	408.5	390.6	375.2	362.4	351.2	339.6	329.6	322.3
15°	484.6	461.1	437.2	416.0	394.3	375.4	358.6	345.5	332.3	321.0	312.5
17.5°	511.5	480.0	450.0	419.5	400.3	375.9	355.3	338.1	324.5	313.2	302.3
20°	527.4	496.1	459.3	427.9	396.1	371.1	348.2	330.8	314.9	301.9	293.0
22.5°	536.0	503.1	464.6	432.4	395.3	367.3	342.9	322.3	305.2	292.3	282.2
25°	548.1	503.1	467.4	428.8	396.6	362.8	335.3	315.5	297.6	282.7	272.1
27.5°	553.6	507.5	467.7	421.8	388.6	354.3	326.5	305.6	285.7	271.1	262.0
30°	558.1	508.4	461.1	416.3	379.4	344.9	317.7	294.3	275.7	261.8	252.2
32.5°	558.4	506.2	452.1	406.1	366.9	333.8	307.2	285.2	265.8	251.0	241.6
35°	555.4	500.9	441.9	390.3	352.5	322.3	295.8	274.2	254.5	240.4	230.8
37.5°	547.8	494.9	432.3	375.5	335.4	306.1	283.5	263.0	243.4	229.3	221.3
40°	531.6	485.3	419.7	359.8	318.2	288.8	269.1	250.2	232.8	218.2	210.2
42.5°	510.0	470.9	404.4	343.0	298.9	270.6	253.2	237.9	220.2	207.6	199.5
45°	479.5	451.3	389.1	325.5	279.9	252.0	236.1	223.5	208.3	195.6	188.5
47.5°	445.0	427.8	369.4	305.7	259.8	233.6	218.5	208.4	195.5	184.7	177.6
50°	406.2	399.8	347.7	285.8	241.1	214.2	200.3	192.3	181.4	172.8	166.6
52.5°	364.1	368.1	324.8	265.6	223.0	195.8	182.6	175.3	168.3	161.0	155.2
55°	321.3	330.8	297.1	243.6	202.3	178.6	165.6	159.0	153.9	147.7	143.6
57.5°	281.2	296.0	268.4	220.0	183.2	160.5	148.2	142.4	138.6	135.3	131.5
60°	242.2	259.3	238.9	198.0	164.1	143.4	132.5	126.8	125.0	122.5	118.9
62.5°	207.8	225.2	209.9	175.3	144.9	127.2	117.2	112.6	109.9	109.1	106.9
65°	175.4	191.7	180.1	151.5	126.7	110.9	102.1	98.0	96.5	96.3	94.7
67.5°	147.4	163.2	152.5	128.5	107.4	94.7	88.0	84.7	83.2	83.4	82.2
70°	121.5	132.6	126.3	107.4	91.2	79.9	74.8	71.1	70.0	70.0	69.6
72.5°	97.5	106.3	101.5	87.0	74.3	65.7	61.2	59.0	58.0	57.9	58.0
75°	76.3	83.9	79.6	68.3	58.7	52.2	48.4	46.9	46.4	46.1	46.3
77.5°	57.0	61.8	59.2	51.9	43.9	39.5	37.6	36.1	35.6	35.8	36.1
80°	40.3	42.9	41.5	36.8	31.5	28.5	27.2	26.0	25.5	26.0	26.0
82.5°	25.5	27.5	26.2	23.2	20.6	18.6	17.2	16.9	16.7	16.4	16.9
85°	13.9	14.9	14.3	13.3	11.4	10.6	9.6	9.5	9.5	9.5	9.5
87.5°	5.5	6.1	5.3	5.3	5.0	4.1	4.1	4.0	3.8	4.0	4.0
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°	362.1	362.1	362.1	362.1	362.1	362.1	362.1	362.1	362.1	362.1	362.1
2.5°	354.5	352.3	351.0	349.2	347.0	344.2	343.0	344.2	343.5	342.4	342.9
5°	344.7	341.9	338.2	335.3	331.9	327.8	326.5	325.8	324.8	324.3	323.5
7.5°	335.1	330.9	326.5	322.3	317.5	313.9	312.2	311.0	310.7	308.2	307.2
10°	325.1	320.0	315.5	309.9	305.7	300.9	298.9	297.6	296.1	294.5	293.3
12.5°	314.7	309.6	303.9	298.6	294.5	289.2	286.5	285.0	283.9	282.7	281.4
15°	305.6	300.4	292.6	288.7	283.7	278.4	276.7	273.4	273.7	271.8	270.4
17.5°	296.0	288.3	282.9	276.9	273.2	269.4	266.3	262.8	262.3	260.8	260.3
20°	285.2	277.2	273.4	267.3	262.3	258.5	255.7	255.3	254.3	252.2	251.4
22.5°	274.6	268.1	262.8	257.2	252.7	247.7	246.4	246.9	245.1	244.6	242.7
25°	265.0	259.3	252.7	247.4	243.7	240.6	238.8	238.1	237.4	236.9	236.1
27.5°	254.7	248.7	243.1	238.8	235.3	233.1	232.0	230.5	230.3	230.3	230.0
30°	244.4	239.1	235.3	229.8	226.7	225.3	224.3	223.8	224.3	224.3	224.5
32.5°	234.9	229.8	225.3	221.5	218.4	217.4	217.2	217.2	217.9	217.9	218.4
35°	225.2	220.0	215.9	213.2	210.6	210.4	210.6	210.9	211.7	211.9	212.6
37.5°	214.6	210.6	207.4	204.1	203.4	203.8	204.1	204.4	204.8	206.1	206.1
40°	204.8	201.8	198.6	196.5	195.3	196.1	196.6	196.8	197.8	198.6	199.3
42.5°	195.2	192.3	189.8	188.0	187.5	188.2	188.7	189.2	190.2	190.8	192.0
45°	184.4	182.6	180.4	178.9	179.1	180.1	180.1	181.7	182.4	182.7	183.5
47.5°	174.4	172.4	170.9	170.3	170.1	170.9	171.4	172.8	173.1	174.3	174.9
50°	163.8	162.3	161.2	160.3	160.5	160.8	162.0	163.3	163.6	165.0	166.1
52.5°	152.7	151.4	150.4	150.7	151.2	151.2	152.4	153.2	154.0	155.0	156.2
55°	141.8	139.9	140.1	139.6	140.1	141.3	141.8	143.1	143.8	144.2	145.9
57.5°	129.8	129.5	129.0	128.5	129.5	130.0	130.8	131.6	132.8	133.5	134.6
60°	117.6	117.1	117.1	117.7	118.1	119.0	120.4	120.9	121.2	122.5	124.0
62.5°	106.3	105.8	105.6	106.6	106.6	107.6	108.1	108.9	110.3	110.8	112.7
65°	94.2	93.8	93.8	94.7	94.8	96.7	96.7	96.7	97.5	99.3	100.3
67.5°	81.6	81.7	82.2	82.7	83.4	83.9	84.1	85.1	86.4	87.5	89.5
70°	69.0	69.8	70.8	70.6	71.1	72.0	72.1	73.1	74.3	75.8	78.1
72.5°	57.7	58.2	59.2	59.2	59.9	60.4	61.2	61.8	63.3	64.7	65.7
75°	46.4	46.6	47.4	47.9	48.4	48.7	49.6	50.7	51.6	52.7	54.2
77.5°	36.5	36.1	36.8	37.0	37.3	38.0	38.6	39.8	40.5	41.8	42.3
80°	25.9	26.5	26.7	26.9	27.2	28.0	28.5	29.0	29.7	30.8	31.3
82.5°	17.1	17.4	17.9	18.1	18.4	18.6	18.7	19.6	20.1	20.4	22.1
85°	9.9	10.4	10.1	10.1	10.4	10.6	11.3	11.3	11.9	11.6	12.4
87.5°	4.3	4.1	4.1	4.3	4.1	4.0	4.5	4.5	4.3	4.5	4.5
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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CATALOG NUMBER: S123DR-H340D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	362.1	362.1	362.1	362.1
2.5°	342.1	342.1	340.7	341.2
5°	321.8	322.5	320.8	320.3
7.5°	306.9	306.2	305.1	305.1
10°	292.3	291.6	291.2	291.2
12.5°	279.7	279.0	278.1	278.9
15°	268.4	268.6	267.9	267.9
17.5°	259.8	258.3	257.8	257.7
20°	249.5	249.9	249.2	248.0
22.5°	243.1	242.2	241.6	241.4
25°	236.4	235.6	235.4	234.8
27.5°	229.8	230.0	229.5	229.5
30°	224.3	224.8	224.3	224.5
32.5°	218.9	218.9	218.9	218.2
35°	212.9	213.1	212.9	212.6
37.5°	206.8	206.8	206.9	207.3
40°	200.0	200.0	200.3	200.3
42.5°	191.8	192.7	193.2	192.3
45°	184.5	184.7	184.9	184.7
47.5°	176.4	175.9	176.1	176.4
50°	166.3	167.5	167.5	166.5
52.5°	156.5	156.9	157.5	157.5
55°	146.9	147.1	147.2	147.6
57.5°	136.0	136.1	136.1	136.0
60°	125.0	126.0	125.8	126.0
62.5°	113.2	114.7	115.2	115.1
65°	102.1	102.5	103.3	104.5
67.5°	90.4	91.2	92.5	92.2
70°	78.8	79.9	80.2	80.9
72.5°	67.2	68.6	69.0	69.3
75°	55.9	56.5	57.2	57.0
77.5°	43.6	44.6	45.8	45.1
80°	32.7	32.8	33.8	33.5
82.5°	21.6	22.9	22.9	22.2
85°	12.6	12.6	12.6	12.6
87.5°	4.3	4.1	4.5	4.3
90°	0.0	0.0	0.0	0.0

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