

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: P243596

Luminaire Tested: **S124RDR-H350D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243596
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-70)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDR-H350D830-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1307.6 lumens
Efficiency: N/A
Efficacy: 116.7 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

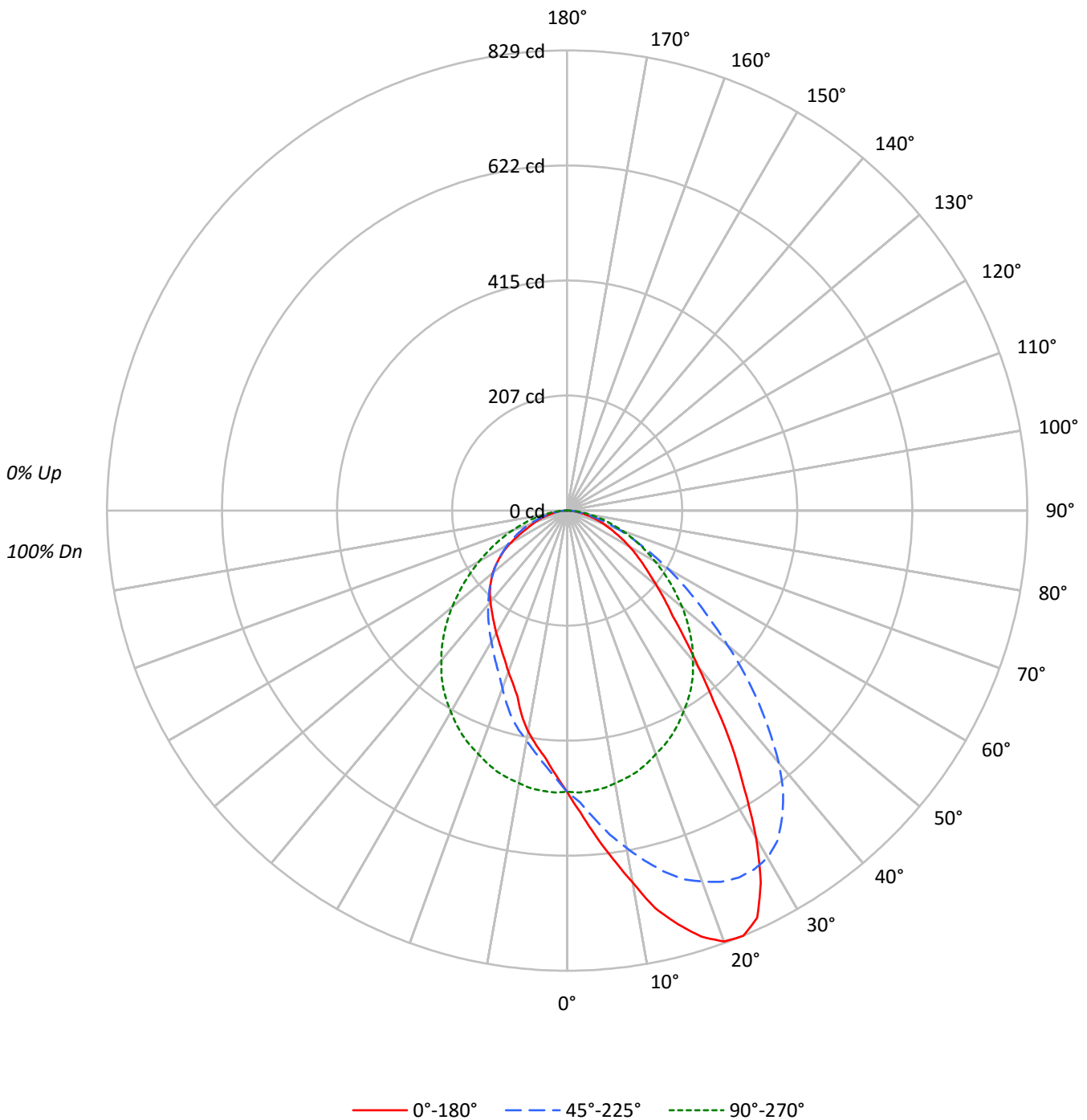
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	110	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88					86				
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	75					73				
3	92	83	75	69	90	81	74	68	78	72	67	76	70	66	73	69	65					63				
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57					55				
5	79	66	58	52	77	65	57	51	63	56	51	61	55	50	60	54	50					48				
6	73	60	52	46	71	59	51	45	58	50	45	56	50	45	54	49	44					42				
7	68	55	46	41	66	54	46	40	53	45	40	51	45	40	50	44	40					38				
8	63	50	42	36	62	50	42	36	48	41	36	47	41	36	46	40	36					34				
9	59	46	38	33	58	46	38	33	45	38	33	43	37	33	42	37	32					31				
10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	39	34	30					28				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	4503	4503	4503
5°	5246	4522	3993
10°	6143	4503	3650
15°	7099	4481	3188
20°	7815	4418	2923
25°	7941	4377	2732
30°	6990	4299	2620
35°	5609	4226	2535
40°	4267	4091	2495
45°	3388	3941	2465
50°	2908	3746	2423
55°	2568	3504	2306
60°	2300	3252	2112
65°	2025	3004	1775
70°	1804	2729	1601
75°	1573	2480	1422
80°	1331	2129	1310
85°	1163	1836	1326



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.2	3.8
10°-20°	149.1	11.4
20°-30°	232.7	17.8
30°-40°	259.4	19.8
40°-50°	233.2	17.8
50°-60°	184.3	14.1
60°-70°	122.4	9.4
70°-80°	61.4	4.7
80°-90°	16.0	1.2
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	33.0
0°-40°	690.3	52.8
0°-60°	1107.8	84.7
0°-90°	1307.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1307.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	507	507	507	507	507	
5°	588	556	507	460	448	59
15°	771	673	487	386	346	219
25°	810	730	446	303	279	362
35°	517	675	389	246	234	321
45°	270	486	314	197	196	214
55°	166	286	226	149	149	149
65°	96	146	143	98	84	96
75°	46	58	72	48	41	49
85°	11	12	18	13	13	13
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°	506.6	506.6	506.6	506.6	506.6	506.6	506.6	506.6	506.6	506.6	506.6
2.5°	544.1	542.1	542.0	539.4	539.2	536.6	535.8	533.7	529.3	526.0	526.2
5°	587.9	586.3	586.1	583.6	582.8	579.6	574.7	568.8	561.9	556.2	552.4
7.5°	632.9	635.7	632.7	632.7	627.0	623.2	613.6	608.6	596.8	588.5	579.8
10°	680.6	683.2	682.0	679.7	672.2	664.5	654.4	644.7	630.3	617.3	608.6
12.5°	733.9	726.2	731.2	723.9	717.7	705.5	695.8	676.5	665.1	646.1	629.2
15°	771.4	768.4	768.2	763.3	756.6	743.2	732.7	712.6	693.1	673.1	654.0
17.5°	804.9	805.3	802.6	794.7	786.0	773.0	758.8	740.8	718.5	696.4	673.7
20°	826.2	826.4	824.5	820.3	810.9	799.0	784.4	760.9	735.7	711.2	688.5
22.5°	829.4	830.0	829.4	826.8	820.3	810.7	797.2	777.3	751.9	723.9	696.8
25°	809.7	811.6	811.8	815.4	812.0	808.3	798.4	781.7	758.2	729.8	700.4
27.5°	755.6	761.1	766.3	772.6	778.3	783.4	784.2	775.3	755.2	728.8	700.8
30°	681.0	687.6	697.8	704.5	722.3	733.5	748.7	752.1	742.4	722.1	695.0
32.5°	594.2	601.1	605.1	627.2	652.6	671.0	696.2	711.2	715.0	705.3	683.2
35°	516.9	518.1	521.0	546.1	571.3	599.2	630.5	656.6	674.3	675.3	664.5
37.5°	434.0	435.4	447.1	466.2	488.1	518.7	554.8	591.9	624.4	639.4	636.3
40°	367.7	367.4	379.8	396.4	417.7	449.4	486.7	527.2	561.9	593.2	600.7
42.5°	314.1	315.5	326.1	335.8	356.3	378.6	418.4	460.5	505.1	539.4	562.3
45°	269.5	273.0	280.3	289.4	304.8	325.3	357.9	399.7	445.3	486.5	513.9
47.5°	238.7	239.7	243.5	254.7	265.0	281.5	309.3	344.9	385.3	431.5	467.6
50°	210.3	212.7	214.1	220.8	230.8	246.6	268.1	294.6	334.6	377.0	422.2
52.5°	185.8	187.2	189.8	195.9	203.8	214.8	231.8	255.1	288.4	327.7	370.3
55°	165.7	165.9	168.5	172.8	178.9	187.4	203.6	220.4	250.0	285.7	324.3
57.5°	147.6	146.4	148.8	151.3	157.2	164.5	175.0	192.2	215.2	245.6	280.5
60°	129.4	130.4	130.2	133.2	136.3	143.6	152.5	163.7	182.7	210.5	240.1
62.5°	112.5	112.3	114.2	116.0	118.2	124.1	131.4	140.7	155.5	176.0	204.6
65°	96.3	96.7	98.2	99.6	102.0	105.7	111.3	118.8	130.6	146.4	170.5
67.5°	81.7	83.1	83.8	84.2	86.4	89.2	93.9	100.0	108.1	120.7	140.9
70°	69.4	69.8	70.2	71.6	72.6	74.2	77.7	81.1	88.4	97.7	112.3
72.5°	58.0	57.6	58.8	59.2	59.6	61.2	63.3	65.1	69.8	77.7	86.8
75°	45.8	46.0	46.2	46.8	48.3	48.5	49.5	51.5	54.8	58.0	64.1
77.5°	34.3	34.9	34.7	35.3	35.9	36.5	36.9	38.7	41.0	43.6	46.6
80°	26.0	26.0	26.0	26.4	26.0	27.4	27.4	28.0	28.6	29.8	32.0
82.5°	17.8	18.2	18.3	18.5	18.7	18.7	18.9	19.3	20.1	20.5	21.1
85°	11.4	11.0	11.2	11.2	11.2	11.2	11.6	12.0	12.0	12.2	12.8
87.5°	5.1	5.1	5.1	5.1	4.9	5.1	5.3	5.3	5.5	5.5	5.9
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	506.6	506.6	506.6	506.6	506.6	506.6	506.6	506.6	506.6	506.6	506.6
2.5°	525.0	524.4	521.4	518.3	515.3	512.4	511.4	508.4	504.9	501.7	498.2
5°	548.5	543.7	537.2	530.5	523.6	517.3	512.4	506.8	500.5	493.0	487.1
7.5°	572.1	563.5	552.8	542.9	531.1	521.6	512.2	504.3	495.2	484.5	476.5
10°	595.2	580.8	567.8	552.2	537.2	524.2	512.2	498.9	486.9	475.5	464.2
12.5°	613.6	599.2	580.4	561.3	542.0	525.0	508.8	493.2	478.2	464.4	452.0
15°	634.5	613.8	590.7	569.6	543.1	522.2	503.7	486.9	469.7	453.0	439.4
17.5°	649.9	625.4	596.8	572.5	547.1	521.0	498.7	477.6	457.9	440.3	426.3
20°	661.7	632.7	604.1	573.3	542.9	516.3	491.2	467.0	447.1	427.9	413.1
22.5°	666.8	636.3	604.5	571.2	538.8	508.6	482.6	457.5	435.0	415.3	398.1
25°	669.0	635.5	602.5	564.6	531.9	501.1	472.1	446.3	423.2	400.9	383.9
27.5°	667.2	631.3	593.4	557.7	520.6	490.5	459.7	433.4	409.4	387.9	368.9
30°	662.5	621.9	584.2	544.1	508.4	476.6	446.7	418.8	394.6	372.7	353.9
32.5°	650.3	611.2	568.4	529.3	490.9	459.5	432.3	404.8	380.2	357.3	339.1
35°	635.1	596.8	552.0	511.2	473.1	441.3	413.9	389.4	365.2	340.9	322.4
37.5°	615.9	577.1	533.9	489.9	452.6	421.8	396.7	372.1	348.0	325.7	305.0
40°	590.1	554.6	511.2	467.0	429.5	399.9	375.2	352.6	331.2	309.3	287.1
42.5°	557.9	530.9	486.1	442.5	405.8	376.4	354.5	334.2	313.7	291.2	271.1
45°	523.6	500.5	459.9	415.9	381.0	352.4	331.4	313.5	294.2	274.2	253.1
47.5°	484.9	467.8	432.7	389.1	352.4	327.9	308.6	292.2	274.6	256.9	236.4
50°	441.3	430.9	400.9	361.2	326.3	301.5	285.5	270.9	255.9	238.1	220.6
52.5°	397.7	395.8	367.7	332.8	299.9	276.8	261.2	247.8	235.6	218.8	204.0
55°	352.0	357.9	334.6	302.4	273.0	250.8	236.9	226.1	215.4	201.2	187.0
57.5°	311.3	318.0	302.0	272.5	245.0	226.1	214.3	204.4	195.1	182.1	172.6
60°	266.3	278.6	270.1	243.1	218.8	201.8	190.8	182.9	175.2	163.9	155.7
62.5°	230.8	239.3	234.4	214.3	192.8	178.9	169.1	161.8	155.7	147.0	138.9
65°	192.8	203.4	200.8	187.6	168.7	156.1	148.6	142.8	136.5	129.6	122.9
67.5°	158.4	169.5	168.9	159.8	145.8	135.3	128.2	124.1	119.0	112.3	108.1
70°	127.4	137.7	138.1	133.6	123.7	113.8	108.7	105.0	101.0	96.1	93.1
72.5°	99.0	108.3	109.9	107.7	101.4	94.9	90.4	87.8	84.4	80.3	77.7
75°	74.0	80.7	84.4	83.5	80.9	76.5	74.0	72.2	68.9	65.9	63.7
77.5°	52.7	58.0	61.8	63.3	62.1	60.4	58.0	56.6	53.1	51.7	50.5
80°	35.3	40.0	43.4	44.4	45.0	44.6	42.4	41.6	39.9	39.3	38.1
82.5°	21.7	24.3	26.6	29.2	30.4	30.4	29.2	29.4	27.8	27.0	26.6
85°	13.2	13.8	14.2	16.2	17.8	18.3	17.8	18.0	17.4	16.8	16.2
87.5°	6.1	6.1	6.3	6.7	7.1	8.3	8.7	9.3	8.5	8.5	7.1
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°	506.6	506.6	506.6	506.6	506.6	506.6	506.6	506.6	506.6	506.6	506.6
2.5°	496.0	493.4	491.4	488.3	485.7	481.6	480.2	480.2	481.0	480.0	481.0
5°	483.0	478.2	473.1	468.6	463.6	460.1	456.5	455.7	455.3	453.0	453.2
7.5°	469.9	463.6	457.1	451.2	445.1	439.6	435.8	434.2	432.9	431.3	429.5
10°	455.9	448.6	440.9	434.2	428.3	420.8	417.1	415.9	411.9	411.1	408.4
12.5°	441.1	433.6	425.9	417.3	411.5	404.2	398.7	396.2	392.4	389.6	385.5
15°	429.5	420.0	409.8	401.3	393.8	385.7	378.2	373.3	368.3	360.6	356.9
17.5°	415.1	404.2	395.4	386.3	375.4	363.6	354.7	347.4	342.1	335.8	332.0
20°	399.5	389.4	378.4	365.6	354.1	340.7	332.6	326.5	322.4	318.6	316.6
22.5°	385.7	374.1	358.9	346.6	330.7	320.0	313.5	309.5	305.6	301.7	299.7
25°	370.7	357.1	338.5	323.6	311.5	303.2	296.9	293.2	289.0	286.7	283.7
27.5°	355.9	338.4	319.8	306.2	296.7	287.1	281.7	278.8	275.6	272.3	269.9
30°	338.0	318.0	302.6	290.2	280.7	272.7	268.7	264.4	261.6	259.6	258.3
32.5°	319.2	300.1	286.1	275.4	266.1	260.0	255.1	252.3	250.0	247.8	246.2
35°	301.7	283.1	271.3	261.0	253.3	246.4	242.7	240.1	238.1	236.4	235.6
37.5°	284.3	268.5	255.7	247.6	239.5	234.0	230.4	228.1	226.9	225.1	225.3
40°	267.1	252.9	242.7	233.4	225.9	221.2	218.4	217.4	215.6	215.0	215.6
42.5°	251.7	238.7	228.9	220.2	213.7	209.1	207.0	205.6	205.0	204.8	205.0
45°	236.7	224.5	215.0	207.9	201.2	197.1	195.3	194.3	193.7	194.7	194.9
47.5°	221.8	210.7	202.2	193.9	188.4	185.5	183.7	182.9	183.5	183.9	185.3
50°	207.0	196.7	187.8	180.5	176.2	173.4	172.8	171.4	172.4	173.0	174.0
52.5°	192.0	182.7	174.8	167.9	163.4	161.6	160.2	159.6	161.0	161.0	162.0
55°	176.8	168.7	161.4	155.1	151.5	149.3	148.4	147.6	148.4	148.6	148.4
57.5°	162.6	154.9	147.2	141.9	138.9	136.5	135.5	135.1	134.9	135.7	135.5
60°	147.6	140.3	134.2	128.6	125.7	124.3	122.1	122.5	122.5	122.5	120.5
62.5°	132.6	125.3	120.0	116.2	112.7	110.3	109.9	109.3	108.1	107.9	105.4
65°	117.2	111.7	107.1	103.4	99.8	97.9	97.3	95.5	94.1	91.5	89.8
67.5°	103.0	99.0	93.7	90.6	87.6	85.2	83.1	81.7	78.9	76.4	74.8
70°	88.8	84.6	81.1	77.7	74.8	72.6	70.0	67.5	65.7	64.1	62.9
72.5°	74.6	71.0	68.1	64.9	61.8	59.6	57.6	55.6	54.8	54.1	53.5
75°	61.4	58.0	55.2	52.7	50.9	48.3	47.3	46.6	45.8	44.8	43.6
77.5°	48.5	46.0	43.8	41.6	40.0	38.7	37.9	35.5	33.5	33.1	32.7
80°	36.1	34.1	32.7	31.2	29.4	27.4	26.8	26.0	25.6	25.6	25.8
82.5°	25.3	24.1	22.5	21.1	20.5	19.7	19.7	19.5	19.3	19.5	19.5
85°	15.4	13.8	13.4	13.2	13.4	13.4	13.4	13.4	13.2	13.4	13.0
87.5°	6.7	7.3	7.5	6.9	7.1	6.7	6.9	6.9	6.9	7.1	6.9
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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CATALOG NUMBER: S124RDR-H350D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	506.6	506.6	506.6	506.6
2.5°	479.8	479.8	477.8	476.3
5°	452.8	450.2	449.8	447.5
7.5°	427.5	427.1	426.1	426.1
10°	407.4	406.0	404.6	404.4
12.5°	379.0	381.0	378.6	378.0
15°	354.1	352.6	350.6	346.4
17.5°	331.1	328.1	327.3	325.5
20°	312.9	310.7	309.9	309.0
22.5°	295.7	295.3	293.0	292.4
25°	283.1	281.1	279.6	278.6
27.5°	269.3	267.9	267.1	265.6
30°	256.7	256.3	255.3	255.3
32.5°	245.2	244.0	244.0	243.8
35°	234.8	235.2	234.0	233.6
37.5°	224.9	224.3	224.5	224.1
40°	215.2	214.8	214.8	215.0
42.5°	205.4	205.6	206.0	206.0
45°	195.5	195.7	196.1	196.1
47.5°	186.2	185.8	186.2	185.8
50°	174.4	175.6	175.4	175.2
52.5°	162.4	162.0	162.8	162.6
55°	149.3	148.8	149.5	148.8
57.5°	134.7	134.9	134.9	134.6
60°	120.1	119.6	118.8	118.8
62.5°	103.2	101.4	100.2	101.0
65°	86.8	85.4	85.0	84.4
67.5°	73.8	72.2	71.6	71.4
70°	62.5	61.8	61.6	61.6
72.5°	53.1	53.1	52.5	52.1
75°	43.2	42.4	41.4	41.4
77.5°	32.4	32.2	32.0	32.0
80°	25.3	25.3	25.5	25.6
82.5°	18.9	19.1	19.3	19.3
85°	12.8	12.8	13.0	13.0
87.5°	6.9	6.9	6.9	6.7
90°	0.0	0.0	0.0	0.0

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