

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P243601

Luminaire Tested: S124RDRP-H350D835-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243601
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
Product Line: NEO-RAY
Catalog Number: S124RDRP-H350D835-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1387.3 lumens
Efficiency: N/A
Efficacy: 123.9 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 (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: 24 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°	45°	90°	135°	180°
0°	4778	4778	4778	4778	4778
5°	5566	5265	4798	4355	4236
10°	6518	5911	4778	4030	3873
15°	7531	6572	4754	3766	3383
20°	8292	7138	4686	3420	3101
25°	8425	7594	4644	3155	2899
30°	7417	7863	4561	2969	2781
35°	5951	7775	4484	2837	2689
40°	4528	7303	4340	2722	2648
45°	3594	6489	4181	2629	2616
50°	3085	5531	3974	2544	2571
55°	2724	4697	3718	2456	2445
60°	2441	3970	3449	2345	2240
65°	2147	3266	3186	2183	1885
70°	1915	2693	2895	2001	1697
75°	1669	2112	2631	1762	1511
80°	1413	1618	2263	1490	1392
85°	1234	1326	1938	1448	1407

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 6983 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.2	3.8
10°-20°	158.2	11.4
20°-30°	246.8	17.8
30°-40°	275.3	19.8
40°-50°	247.4	17.8
50°-60°	195.5	14.1
60°-70°	129.9	9.4
70°-80°	65.1	4.7
80°-90°	17.0	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°	457.2	33.0
0°-40°	732.4	52.8
0°-60°	1175.4	84.7
0°-90°	1387.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1387.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	538	538	538	538	538	
5°	624	590	538	488	475	62
15°	818	714	517	409	368	233
25°	859	774	474	322	296	384
35°	548	716	413	261	248	341
45°	286	516	333	209	208	227
55°	176	303	240	158	158	158
65°	102	155	152	104	90	102
75°	49	62	77	51	44	52
85°	12	13	19	14	14	14
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°	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5
2.5°	577.3	575.2	575.0	572.3	572.1	569.3	568.5	566.2	561.6	558.0	558.2
5°	623.8	622.1	621.9	619.2	618.3	615.0	609.7	603.5	596.1	590.1	586.1
7.5°	671.5	674.4	671.3	671.3	665.2	661.2	651.0	645.7	633.2	624.4	615.2
10°	722.1	724.9	723.6	721.1	713.1	705.0	694.3	684.0	668.8	654.9	645.7
12.5°	778.7	770.5	775.7	768.0	761.5	748.5	738.3	717.7	705.6	685.5	667.5
15°	818.4	815.3	815.1	809.8	802.7	788.5	777.4	756.0	735.3	714.2	693.9
17.5°	854.0	854.4	851.5	843.1	833.9	820.1	805.0	786.0	762.3	738.9	714.8
20°	876.6	876.8	874.7	870.3	860.3	847.7	832.2	807.3	780.5	754.6	730.5
22.5°	880.0	880.6	880.0	877.2	870.3	860.1	845.8	824.7	797.7	768.0	739.3
25°	859.0	861.1	861.3	865.1	861.5	857.6	847.1	829.3	804.4	774.3	743.1
27.5°	801.7	807.5	813.0	819.7	825.7	831.2	832.0	822.6	801.3	773.2	743.5
30°	722.6	729.5	740.3	747.5	766.3	778.2	794.4	797.9	787.7	766.1	737.4
32.5°	630.5	637.8	642.0	665.4	692.4	711.9	738.7	754.6	758.6	748.3	724.9
35°	548.4	549.7	552.8	579.4	606.2	635.7	669.0	696.6	715.4	716.5	705.0
37.5°	460.5	462.0	474.3	494.6	517.8	550.3	588.6	627.9	662.5	678.4	675.0
40°	390.2	389.7	402.9	420.5	443.1	476.8	516.4	559.3	596.1	629.4	637.4
42.5°	333.2	334.7	346.0	356.3	378.0	401.7	444.0	488.5	535.8	572.3	596.5
45°	285.9	289.7	297.4	307.1	323.4	345.2	379.7	424.1	472.4	516.2	545.3
47.5°	253.3	254.3	258.3	270.2	281.1	298.7	328.2	365.9	408.8	457.8	496.1
50°	223.1	225.6	227.1	234.2	244.9	261.6	284.5	312.5	355.0	400.0	447.9
52.5°	197.2	198.6	201.4	207.9	216.2	227.9	245.9	270.6	306.0	347.7	392.9
55°	175.8	176.0	178.8	183.4	189.8	198.8	216.0	233.8	265.2	303.1	344.1
57.5°	156.6	155.3	157.8	160.5	166.8	174.6	185.7	203.9	228.4	260.6	297.6
60°	137.3	138.4	138.1	141.3	144.6	152.4	161.8	173.7	193.8	223.3	254.7
62.5°	119.3	119.1	121.2	123.1	125.4	131.7	139.4	149.2	164.9	186.7	217.1
65°	102.1	102.6	104.2	105.7	108.2	112.2	118.1	126.0	138.6	155.3	180.8
67.5°	86.7	88.1	89.0	89.4	91.7	94.6	99.6	106.1	114.7	128.1	149.5
70°	73.7	74.1	74.5	76.0	77.0	78.7	82.5	86.0	93.8	103.6	119.1
72.5°	61.5	61.1	62.4	62.8	63.2	64.9	67.2	69.1	74.1	82.5	92.1
75°	48.6	48.8	49.0	49.6	51.3	51.5	52.5	54.6	58.2	61.5	68.0
77.5°	36.4	37.0	36.8	37.5	38.1	38.7	39.1	41.0	43.5	46.3	49.4
80°	27.6	27.6	27.6	28.0	27.6	29.1	29.1	29.7	30.4	31.6	33.9
82.5°	18.8	19.3	19.5	19.7	19.9	19.9	20.1	20.5	21.4	21.8	22.4
85°	12.1	11.7	11.9	11.9	11.9	11.9	12.3	12.8	12.8	13.0	13.6
87.5°	5.4	5.4	5.4	5.4	5.2	5.4	5.7	5.7	5.9	5.9	6.3
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°	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5
2.5°	557.0	556.4	553.2	549.9	546.7	543.6	542.5	539.4	535.6	532.3	528.5
5°	581.9	576.9	570.0	562.8	555.5	548.8	543.6	537.7	531.0	523.1	516.8
7.5°	607.0	597.8	586.5	576.0	563.5	553.4	543.4	535.0	525.4	514.1	505.5
10°	631.5	616.2	602.4	585.9	570.0	556.2	543.4	529.4	516.6	504.5	492.5
12.5°	651.0	635.7	615.8	595.5	575.0	557.0	539.8	523.3	507.4	492.7	479.5
15°	673.2	651.2	626.7	604.3	576.2	554.1	534.4	516.6	498.4	480.6	466.1
17.5°	689.5	663.5	633.2	607.4	580.4	552.8	529.1	506.8	485.8	467.2	452.3
20°	702.0	671.3	640.9	608.3	576.0	547.8	521.2	495.4	474.3	454.0	438.3
22.5°	707.5	675.0	641.3	606.0	571.6	539.6	512.0	485.4	461.5	440.6	422.4
25°	709.8	674.2	639.2	599.1	564.3	531.7	500.9	473.5	449.0	425.3	407.3
27.5°	707.9	669.8	629.6	591.7	552.4	520.4	487.7	459.9	434.3	411.5	391.4
30°	702.9	659.8	619.8	577.3	539.4	505.7	473.9	444.4	418.6	395.4	375.5
32.5°	689.9	648.5	603.0	561.6	520.8	487.5	458.6	429.5	403.4	379.1	359.8
35°	673.8	633.2	585.7	542.3	501.9	468.2	439.1	413.2	387.4	361.7	342.0
37.5°	653.5	612.2	566.4	519.7	480.2	447.5	420.9	394.8	369.2	345.6	323.6
40°	626.1	588.4	542.3	495.4	455.7	424.3	398.1	374.0	351.4	328.2	304.6
42.5°	591.9	563.3	515.8	469.5	430.6	399.4	376.1	354.6	332.8	308.9	287.6
45°	555.5	531.0	487.9	441.2	404.2	373.8	351.7	332.6	312.1	290.9	268.6
47.5°	514.5	496.3	459.0	412.8	373.8	347.9	327.4	310.0	291.4	272.5	250.8
50°	468.2	457.1	425.3	383.3	346.2	319.8	302.9	287.4	271.5	252.6	234.0
52.5°	422.0	419.9	390.2	353.1	318.2	293.7	277.1	262.9	249.9	232.1	216.4
55°	373.4	379.7	355.0	320.9	289.7	266.0	251.4	239.9	228.6	213.5	198.4
57.5°	330.3	337.4	320.5	289.1	260.0	239.9	227.3	216.9	207.0	193.2	183.2
60°	282.6	295.6	286.6	257.9	232.1	214.1	202.4	194.0	185.9	173.9	165.1
62.5°	244.9	253.9	248.7	227.3	204.5	189.8	179.4	171.6	165.1	155.9	147.4
65°	204.5	215.8	213.1	199.1	179.0	165.6	157.6	151.5	144.8	137.5	130.4
67.5°	168.1	179.8	179.2	169.5	154.7	143.6	136.1	131.7	126.2	119.1	114.7
70°	135.2	146.1	146.5	141.7	131.2	120.8	115.3	111.4	107.2	101.9	98.8
72.5°	105.1	114.9	116.6	114.3	107.6	100.7	95.9	93.1	89.6	85.2	82.5
75°	78.5	85.6	89.6	88.5	85.8	81.2	78.5	76.6	73.1	69.9	67.6
77.5°	55.9	61.5	65.5	67.2	65.9	64.1	61.5	60.1	56.3	54.8	53.6
80°	37.5	42.5	46.0	47.1	47.7	47.3	45.0	44.2	42.3	41.7	40.4
82.5°	23.0	25.7	28.3	31.0	32.2	32.2	31.0	31.2	29.5	28.7	28.3
85°	14.0	14.7	15.1	17.2	18.8	19.5	18.8	19.0	18.4	17.8	17.2
87.5°	6.5	6.5	6.7	7.1	7.5	8.8	9.2	9.8	9.0	9.0	7.5
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5	537.5
2.5°	526.2	523.5	521.4	518.1	515.3	510.9	509.5	509.5	510.3	509.3	510.3
5°	512.4	507.4	501.9	497.1	491.9	488.1	484.4	483.5	483.1	480.6	480.8
7.5°	498.6	491.9	485.0	478.7	472.2	466.4	462.4	460.7	459.2	457.6	455.7
10°	483.7	476.0	467.8	460.7	454.4	446.5	442.5	441.2	437.1	436.2	433.3
12.5°	468.0	460.1	451.9	442.7	436.6	428.9	423.0	420.3	416.3	413.4	409.0
15°	455.7	445.6	434.7	425.7	417.8	409.2	401.3	396.0	390.8	382.6	378.7
17.5°	440.4	428.9	419.5	409.8	398.3	385.8	376.3	368.6	363.0	356.3	352.3
20°	423.9	413.2	401.5	387.9	375.7	361.5	352.9	346.4	342.0	338.0	336.0
22.5°	409.2	396.9	380.7	367.8	350.8	339.5	332.6	328.4	324.2	320.0	318.0
25°	393.3	378.9	359.2	343.3	330.5	321.7	315.0	311.0	306.6	304.1	301.0
27.5°	377.6	359.0	339.3	324.9	314.8	304.6	298.9	295.8	292.4	288.9	286.3
30°	358.6	337.4	321.1	307.9	297.9	289.3	285.1	280.5	277.6	275.5	274.0
32.5°	338.7	318.4	303.5	292.2	282.4	275.9	270.6	267.7	265.2	262.9	261.2
35°	320.0	300.4	287.8	276.9	268.8	261.4	257.5	254.7	252.6	250.8	249.9
37.5°	301.6	284.9	271.3	262.7	254.1	248.2	244.5	242.0	240.7	238.8	239.0
40°	283.4	268.3	257.5	247.6	239.7	234.6	231.7	230.7	228.8	228.2	228.8
42.5°	267.1	253.3	242.8	233.6	226.7	221.9	219.6	218.1	217.5	217.3	217.5
45°	251.2	238.2	228.2	220.6	213.5	209.1	207.2	206.2	205.5	206.6	206.8
47.5°	235.3	223.5	214.5	205.8	199.9	196.8	194.9	194.0	194.7	195.1	196.5
50°	219.6	208.7	199.3	191.5	186.9	184.0	183.4	181.9	182.9	183.6	184.6
52.5°	203.7	193.8	185.5	178.1	173.3	171.4	170.0	169.3	170.8	170.8	171.8
55°	187.5	179.0	171.2	164.5	160.8	158.5	157.4	156.6	157.4	157.6	157.4
57.5°	172.5	164.3	156.1	150.5	147.4	144.8	143.8	143.4	143.2	144.0	143.8
60°	156.6	148.8	142.3	136.5	133.3	131.9	129.6	130.0	130.0	130.0	127.9
62.5°	140.7	132.9	127.3	123.3	119.5	117.0	116.6	116.0	114.7	114.5	111.8
65°	124.3	118.5	113.7	109.7	105.9	103.8	103.2	101.3	99.8	97.1	95.2
67.5°	109.3	105.1	99.4	96.1	92.9	90.4	88.1	86.7	83.7	81.0	79.3
70°	94.2	89.8	86.0	82.5	79.3	77.0	74.3	71.6	69.7	68.0	66.8
72.5°	79.1	75.4	72.2	68.9	65.5	63.2	61.1	59.0	58.2	57.4	56.7
75°	65.1	61.5	58.6	55.9	54.0	51.3	50.2	49.4	48.6	47.5	46.3
77.5°	51.5	48.8	46.5	44.2	42.5	41.0	40.2	37.7	35.6	35.2	34.7
80°	38.3	36.2	34.7	33.1	31.2	29.1	28.5	27.6	27.2	27.2	27.4
82.5°	26.8	25.5	23.9	22.4	21.8	20.9	20.9	20.7	20.5	20.7	20.7
85°	16.3	14.7	14.2	14.0	14.2	14.2	14.2	14.2	14.0	14.2	13.8
87.5°	7.1	7.7	8.0	7.3	7.5	7.1	7.3	7.3	7.3	7.5	7.3
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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CATALOG NUMBER: S124RDRP-H350D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	537.5	537.5	537.5	537.5
2.5°	509.1	509.1	507.0	505.3
5°	480.4	477.7	477.2	474.7
7.5°	453.6	453.2	452.1	452.1
10°	432.2	430.8	429.3	429.1
12.5°	402.1	404.2	401.7	401.0
15°	375.7	374.0	372.0	367.6
17.5°	351.2	348.1	347.3	345.4
20°	332.0	329.7	328.8	327.8
22.5°	313.8	313.3	310.8	310.2
25°	300.4	298.3	296.6	295.6
27.5°	285.7	284.3	283.4	281.7
30°	272.3	271.9	270.9	270.9
32.5°	260.2	258.9	258.9	258.7
35°	249.1	249.5	248.2	247.8
37.5°	238.6	238.0	238.2	237.8
40°	228.4	227.9	227.9	228.2
42.5°	217.9	218.1	218.5	218.5
45°	207.4	207.6	208.1	208.1
47.5°	197.6	197.2	197.6	197.2
50°	185.0	186.3	186.1	185.9
52.5°	172.3	171.8	172.7	172.5
55°	158.5	157.8	158.7	157.8
57.5°	143.0	143.2	143.2	142.8
60°	127.5	126.8	126.0	126.0
62.5°	109.5	107.6	106.3	107.2
65°	92.1	90.6	90.2	89.6
67.5°	78.3	76.6	76.0	75.8
70°	66.4	65.5	65.3	65.3
72.5°	56.3	56.3	55.7	55.3
75°	45.8	45.0	44.0	44.0
77.5°	34.3	34.1	33.9	33.9
80°	26.8	26.8	27.0	27.2
82.5°	20.1	20.3	20.5	20.5
85°	13.6	13.6	13.8	13.8
87.5°	7.3	7.3	7.3	7.1
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243601
 CATALOG NUMBER: S124RDRP-H350D835-X4F0-XX-UDD-A-W

CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	14.77	16.31	15.14	16.62	16.94	16.47	18.01	16.84	18.32	18.63
	3H	16.01	17.38	16.39	17.71	18.07	17.95	19.33	18.33	19.66	20.02
	4H	16.44	17.73	16.84	18.08	18.46	18.49	19.79	18.89	20.14	20.51
	6H	16.72	17.91	17.13	18.28	18.67	18.88	20.08	19.29	20.44	20.83
	8H	16.80	17.94	17.23	18.33	18.73	19.00	20.14	19.43	20.53	20.93
	12H	16.86	17.95	17.29	18.33	18.76	19.08	20.17	19.51	20.55	20.98
4H	2H	15.98	17.27	16.38	17.62	18.00	17.00	18.29	17.40	18.64	19.02
	3H	17.25	18.32	17.66	18.72	19.12	18.77	19.85	19.19	20.25	20.65
	4H	17.72	18.69	18.15	19.10	19.54	19.43	20.40	19.86	20.81	21.25
	6H	18.05	18.89	18.51	19.34	19.80	19.93	20.77	20.39	21.21	21.67
	8H	18.16	18.94	18.62	19.39	19.85	20.09	20.87	20.55	21.32	21.78
	12H	18.23	18.93	18.71	19.41	19.88	20.20	20.90	20.68	21.38	21.85
8H	4H	18.13	18.92	18.60	19.36	19.83	19.56	20.35	20.02	20.79	21.26
	6H	18.53	19.18	19.03	19.67	20.15	20.16	20.81	20.65	21.30	21.77
	8H	18.68	19.26	19.19	19.77	20.26	20.38	20.96	20.89	21.47	21.96
	12H	18.80	19.31	19.31	19.80	20.37	20.56	21.07	21.07	21.56	22.13
12H	4H	18.18	18.88	18.66	19.36	19.83	19.55	20.25	20.03	20.73	21.20
	6H	18.59	19.17	19.10	19.68	20.17	20.15	20.73	20.66	21.24	21.73
	8H	18.78	19.29	19.29	19.79	20.35	20.41	20.93	20.92	21.42	21.98