

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: P243405

Luminaire Tested: **S123RDR-H560D930-X4F0-XX-UDD-F-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243405
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-64)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDR-H560D930-X4F0-XX-UDD-F-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1597.8 lumens
Efficiency: N/A
Efficacy: 92.9 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

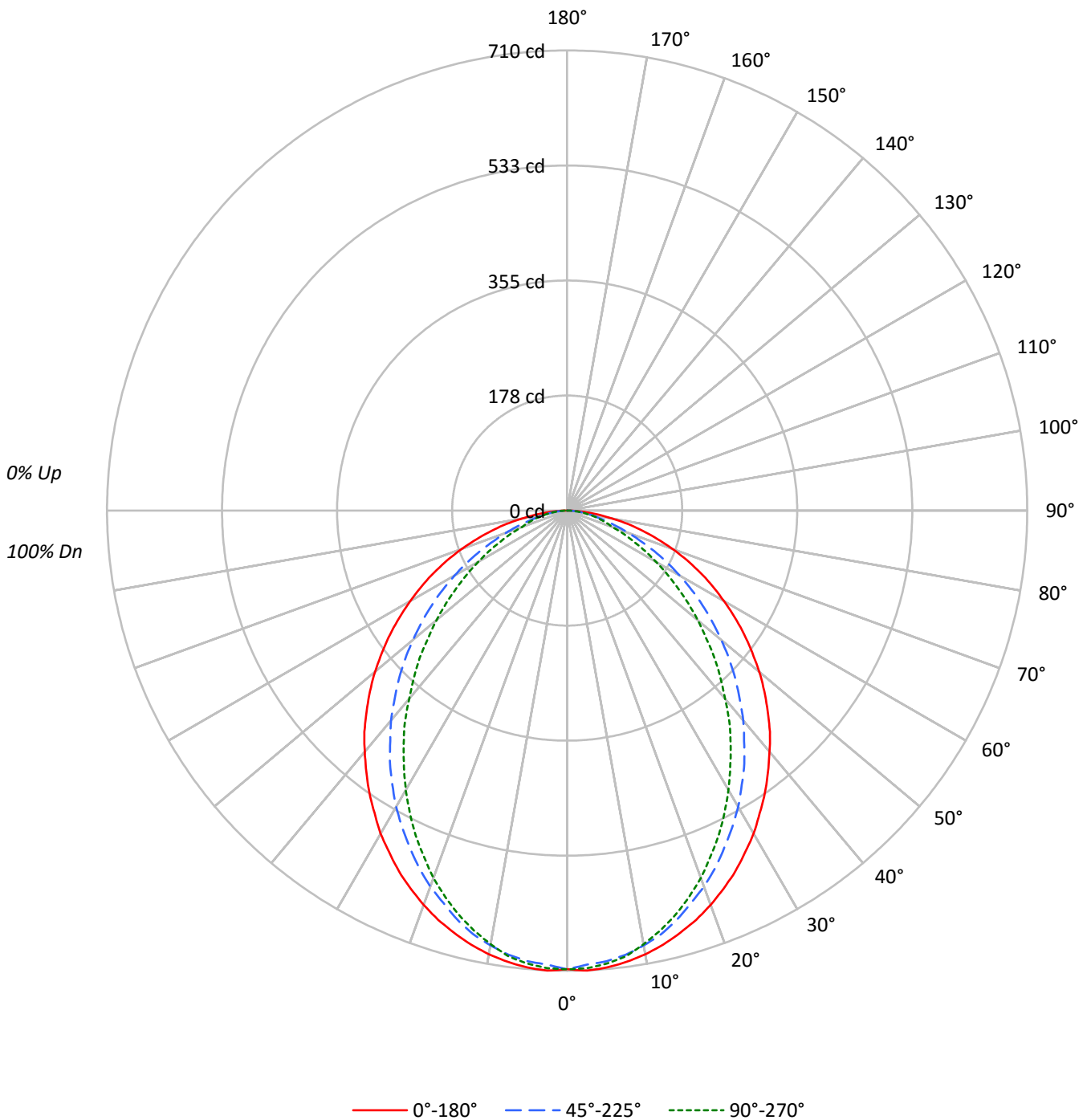
Input Watts (W): 17.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	101	98	107	103	99	96	99	96	93	95	93	90	91	89	88					86				
2	101	93	87	81	98	91	85	80	87	83	78	84	80	77	81	78	75					73				
3	92	82	75	69	90	81	74	68	78	72	67	75	70	66	73	68	65					62				
4	85	73	65	59	83	72	64	58	70	63	58	67	62	57	65	60	56					54				
5	78	66	58	51	76	65	57	51	63	56	50	61	55	50	59	54	49					47				
6	73	60	51	45	71	59	51	45	57	50	45	56	49	44	54	48	44					42				
7	67	55	46	40	66	54	46	40	52	45	40	51	44	40	49	44	39					37				
8	63	50	42	36	61	49	41	36	48	41	36	47	40	36	46	40	35					34				
9	59	46	38	33	58	45	38	33	44	37	32	43	37	32	42	36	32					30				
10	55	43	35	30	54	42	35	30	41	34	30	40	34	30	39	34	29					28				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8578	8578	8578
5°	8611	8492	8538
10°	8557	8383	8362
15°	8464	8206	8103
20°	8351	7965	7782
25°	8214	7677	7400
30°	8056	7387	6969
35°	7874	7054	6506
40°	7688	6692	5995
45°	7501	6289	5516
50°	7298	5853	4961
55°	7052	5399	4400
60°	6773	4863	3835
65°	6502	4256	3273
70°	6124	3565	2619
75°	5653	2824	2496
80°	4935	2506	2276
85°	4158	2197	2114



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.6	4.2
10°-20°	185.3	11.6
20°-30°	266.8	16.7
30°-40°	300.6	18.8
40°-50°	287.1	18.0
50°-60°	234.8	14.7
60°-70°	157.7	9.9
70°-80°	78.6	4.9
80°-90°	20.3	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°	518.7	32.5
0°-40°	819.3	51.3
0°-60°	1341.2	83.9
0°-90°	1597.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1597.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	708	708	708	708	708	
5°	708	705	698	703	702	67
15°	674	670	654	650	646	190
25°	614	601	574	562	553	283
35°	532	512	477	450	440	333
45°	438	412	367	335	322	338
55°	334	304	256	220	208	298
65°	227	195	148	121	114	224
75°	121	92	60	54	53	128
85°	30	17	16	15	15	35
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	707.7	707.7	707.7	707.7	707.7	707.7	707.7	707.7	707.7	707.7	707.7
2.5°	710.4	708.8	706.6	707.2	707.7	708.2	708.2	707.7	706.1	703.9	701.2
5°	707.7	706.1	703.9	703.9	705.0	705.0	705.0	704.4	702.8	700.6	697.9
7.5°	702.3	701.2	698.5	699.0	699.5	699.5	699.5	699.0	696.8	694.1	691.4
10°	695.2	693.6	691.4	691.4	691.9	691.9	691.9	690.8	688.1	684.9	681.1
12.5°	686.0	684.3	682.1	682.1	682.1	682.1	682.1	680.5	676.2	672.9	669.6
15°	674.5	672.9	670.7	670.7	670.2	669.6	668.6	665.8	662.0	658.2	653.9
17.5°	662.0	659.9	657.1	656.6	656.1	655.5	653.9	652.3	646.8	641.4	634.9
20°	647.4	645.2	642.5	641.9	640.3	638.7	637.6	634.3	628.3	621.8	617.5
22.5°	631.1	628.9	626.2	625.1	621.8	620.7	619.1	614.2	607.7	601.7	596.8
25°	614.2	611.5	608.2	606.6	602.8	600.6	600.1	593.0	586.5	580.0	574.0
27.5°	594.6	592.5	589.7	586.5	582.7	580.0	578.9	572.4	564.2	556.6	551.2
30°	575.6	572.4	569.6	565.8	560.4	557.7	555.5	549.0	541.9	532.7	527.8
32.5°	553.3	551.2	547.9	544.1	538.7	536.5	533.2	525.1	515.8	509.3	501.7
35°	532.1	530.0	525.1	521.3	513.6	511.5	508.2	501.1	490.8	483.2	476.7
37.5°	508.8	506.0	502.2	496.8	490.3	487.6	483.2	476.1	464.2	456.6	448.4
40°	485.9	482.1	477.8	471.8	465.3	462.6	458.8	448.4	438.6	429.9	422.9
42.5°	463.1	458.8	453.3	447.9	440.8	437.0	432.7	422.9	412.0	403.9	394.1
45°	437.6	434.3	428.9	422.3	414.2	411.5	406.6	396.2	385.4	376.7	366.9
47.5°	412.5	408.7	403.3	396.8	388.6	384.8	379.9	369.6	358.7	347.9	339.2
50°	387.0	383.2	376.7	370.2	362.5	357.7	353.3	343.0	331.0	321.2	310.4
52.5°	359.8	356.6	351.1	344.6	334.8	331.0	326.7	315.3	303.8	292.4	282.6
55°	333.7	331.6	325.0	318.5	308.2	303.8	299.5	287.5	276.1	264.7	255.5
57.5°	306.6	304.9	298.4	290.8	281.6	277.2	271.8	259.8	248.9	237.5	227.7
60°	279.4	277.8	271.2	263.6	254.9	249.5	243.5	234.3	221.8	211.4	200.6
62.5°	253.3	251.1	245.7	237.5	227.7	222.3	216.9	206.0	194.6	183.7	173.9
65°	226.7	223.9	217.4	209.3	200.0	195.1	189.7	179.4	168.0	157.6	148.4
67.5°	200.0	197.3	190.2	183.7	172.8	168.0	163.1	152.7	141.9	131.5	122.8
70°	172.8	170.1	164.7	156.0	146.8	141.9	137.0	126.1	116.3	108.7	100.6
72.5°	146.2	144.0	138.6	130.5	121.8	116.9	111.4	102.2	93.5	85.3	79.4
75°	120.7	117.4	112.5	104.9	96.2	91.9	88.1	78.8	70.7	65.2	60.3
77.5°	96.2	92.4	87.0	81.0	72.8	68.5	64.7	57.1	51.6	47.8	46.7
80°	70.7	70.1	64.7	58.2	51.1	47.8	44.0	39.1	37.5	37.0	35.9
82.5°	49.5	47.3	42.9	37.0	31.5	29.4	28.3	27.2	26.1	26.1	25.0
85°	29.9	27.7	23.9	19.0	17.9	17.4	16.8	16.8	16.3	15.8	15.8
87.5°	13.0	10.9	8.2	7.6	7.1	7.1	7.6	7.6	7.6	7.1	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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	707.7	707.7	707.7	707.7	707.7	707.7	707.7	707.7	707.7	707.7
2.5°	702.3	705.0	706.6	707.2	707.2	707.2	707.7	707.7	707.2	706.6
5°	698.5	701.2	702.3	703.3	703.3	703.3	703.3	703.3	702.8	701.7
7.5°	692.5	694.1	695.7	695.2	695.2	694.6	694.1	694.6	693.6	693.6
10°	681.6	683.2	684.3	682.7	682.7	683.2	683.2	682.7	681.1	679.4
12.5°	669.1	670.7	669.1	669.6	668.6	667.5	666.9	666.4	664.8	663.7
15°	652.8	652.8	651.7	651.7	650.1	647.9	647.4	647.9	645.7	645.7
17.5°	634.9	633.8	632.1	631.1	630.5	630.5	628.3	628.3	625.6	625.1
20°	615.3	614.2	612.6	609.9	608.8	609.3	607.1	605.5	603.9	603.3
22.5°	594.6	591.9	590.3	587.6	585.4	585.4	583.8	581.0	579.4	577.8
25°	571.3	568.5	565.3	563.1	561.5	558.8	557.7	555.5	553.9	553.3
27.5°	547.3	543.0	538.7	536.5	535.4	532.1	530.5	529.4	526.2	525.6
30°	521.8	518.5	513.1	509.3	506.6	507.1	503.3	501.1	499.5	497.9
32.5°	497.3	491.9	486.5	481.6	478.3	477.8	474.0	471.8	470.2	468.5
35°	469.6	464.2	457.7	453.3	450.1	448.4	444.6	443.5	440.8	439.7
37.5°	441.9	435.9	429.4	424.0	421.8	418.0	416.4	413.6	411.5	411.5
40°	414.7	407.7	401.1	394.6	391.9	389.7	385.4	383.2	380.5	378.9
42.5°	386.5	378.3	372.3	366.3	362.5	360.9	356.0	353.3	350.6	350.0
45°	358.2	350.0	342.4	336.5	334.8	331.6	326.7	322.9	322.3	321.8
47.5°	329.4	321.2	314.2	307.6	305.5	301.7	298.4	295.7	292.4	290.8
50°	301.7	293.5	285.9	278.8	276.1	272.9	269.6	265.8	264.7	263.1
52.5°	273.9	264.7	256.6	250.0	247.9	245.1	241.3	238.1	236.4	235.4
55°	245.7	236.4	229.4	222.9	220.1	218.5	214.2	211.4	209.3	208.2
57.5°	218.0	208.7	202.2	197.3	193.5	191.9	187.5	184.8	183.7	183.2
60°	191.9	183.2	176.1	171.2	168.0	166.3	163.1	160.3	158.7	158.2
62.5°	165.8	158.2	151.6	146.8	144.6	142.4	139.7	137.5	135.9	135.9
65°	140.8	133.2	127.2	123.4	121.2	120.1	116.9	115.8	114.1	114.1
67.5°	116.3	110.9	106.5	101.6	100.0	100.0	96.8	95.7	94.6	94.6
70°	95.1	90.2	85.3	82.6	81.0	80.4	77.7	76.1	75.0	73.9
72.5°	74.5	70.1	65.8	65.2	65.2	64.7	64.7	63.6	63.6	64.1
75°	57.1	56.0	54.9	54.9	54.4	53.8	53.8	53.3	53.3	53.3
77.5°	45.7	45.1	44.6	44.0	44.0	43.5	42.9	42.9	42.9	42.9
80°	34.8	34.2	34.2	33.7	33.2	33.7	33.2	33.2	32.6	32.6
82.5°	24.5	24.5	24.5	23.9	23.9	23.9	23.9	23.4	23.4	23.9
85°	15.2	15.2	15.2	15.2	14.7	15.2	14.7	14.7	14.7	15.2
87.5°	6.5	7.1	6.5	7.1	7.1	6.5	6.5	6.5	6.5	6.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)