

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: P243415

Luminaire Tested: **S123RDR-H560D940-X4F0-XX-UDD-F-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243415
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-H560D940-X4F0-XX-UDD-F-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1747.6 lumens
Efficiency: N/A
Efficacy: 101.6 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

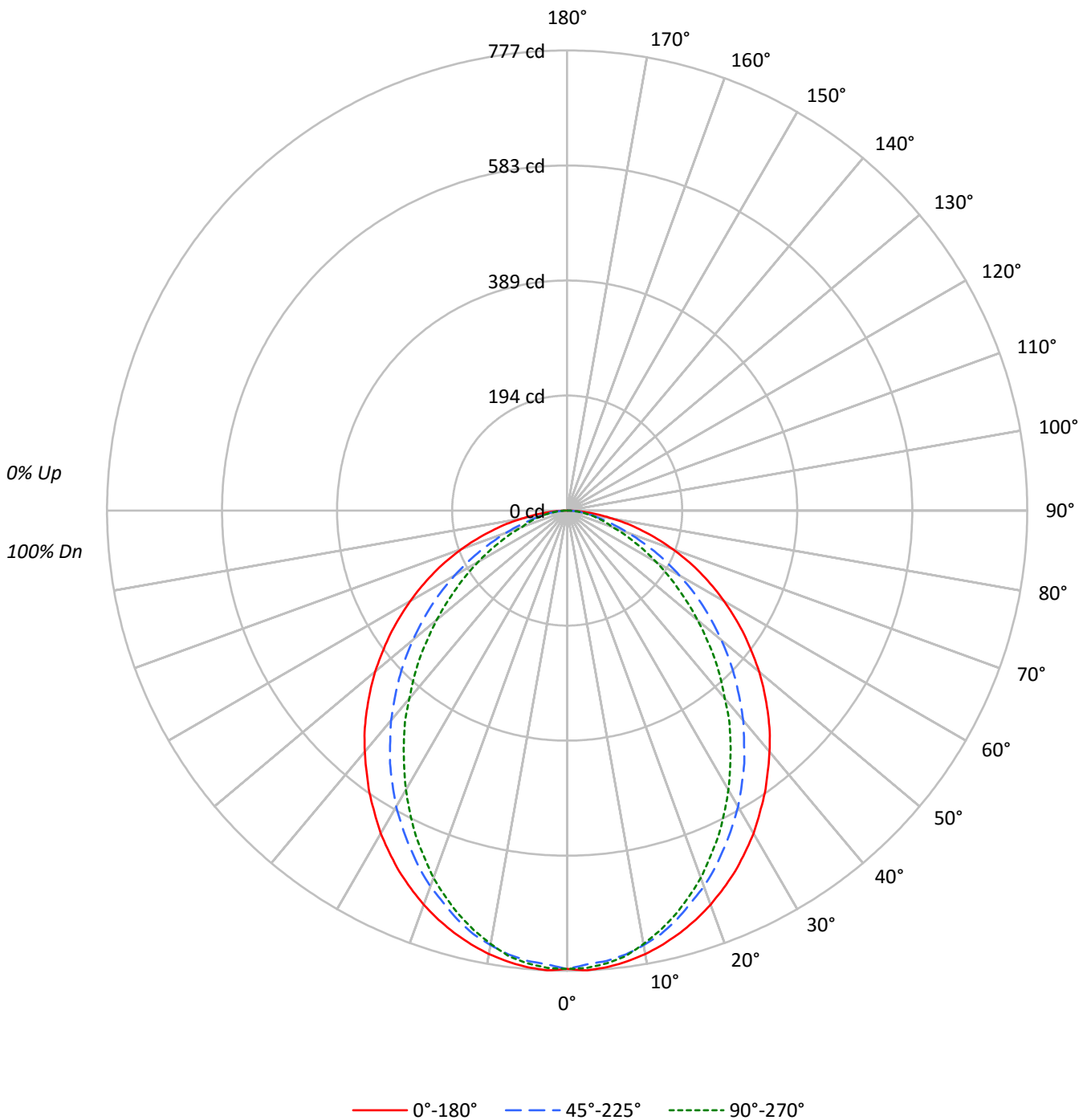
Input Watts (W): 17.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9382	9382	9382
5°	9418	9287	9339
10°	9358	9168	9146
15°	9259	8975	8862
20°	9133	8711	8512
25°	8985	8396	8094
30°	8812	8079	7621
35°	8612	7715	7116
40°	8410	7318	6557
45°	8204	6879	6032
50°	7982	6402	5425
55°	7713	5904	4812
60°	7408	5319	4194
65°	7110	4655	3579
70°	6698	3898	2867
75°	6182	3091	2730
80°	5396	2736	2492
85°	4548	2392	2309



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	72.8	4.2
10°-20°	202.7	11.6
20°-30°	291.8	16.7
30°-40°	328.7	18.8
40°-50°	314.0	18.0
50°-60°	256.8	14.7
60°-70°	172.4	9.9
70°-80°	86.0	4.9
80°-90°	22.2	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°	567.4	32.5
0°-40°	896.1	51.3
0°-60°	1466.9	83.9
0°-90°	1747.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1747.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	774	774	774	774	774	
5°	774	771	763	769	768	73
15°	738	732	715	711	706	208
25°	672	657	628	614	605	309
35°	582	559	521	492	481	364
45°	479	450	401	366	352	369
55°	365	332	279	241	228	326
65°	248	213	162	133	125	245
75°	132	100	66	59	58	140
85°	33	19	17	16	17	38
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°	774.0	774.0	774.0	774.0	774.0	774.0	774.0	774.0	774.0	774.0	774.0
2.5°	777.0	775.2	772.8	773.4	774.0	774.6	774.6	774.0	772.2	769.9	766.9
5°	774.0	772.2	769.9	769.9	771.0	771.0	771.0	770.5	768.7	766.3	763.3
7.5°	768.1	766.9	763.9	764.5	765.1	765.1	765.1	764.5	762.1	759.2	756.2
10°	760.3	758.6	756.2	756.2	756.8	756.8	756.8	755.6	752.6	749.1	744.9
12.5°	750.2	748.5	746.1	746.1	746.1	746.1	746.1	744.3	739.5	736.0	732.4
15°	737.8	736.0	733.6	733.6	733.0	732.4	731.2	728.2	724.1	719.9	715.2
17.5°	724.1	721.7	718.7	718.1	717.5	717.0	715.2	713.4	707.4	701.5	694.4
20°	708.0	705.7	702.7	702.1	700.3	698.5	697.3	693.8	687.2	680.1	675.3
22.5°	690.2	687.8	684.8	683.7	680.1	678.9	677.1	671.8	664.6	658.1	652.7
25°	671.8	668.8	665.2	663.4	659.3	656.9	656.3	648.6	641.5	634.3	627.8
27.5°	650.4	648.0	645.0	641.5	637.3	634.3	633.1	626.0	617.1	608.8	602.8
30°	629.6	626.0	623.0	618.9	612.9	609.9	607.6	600.4	592.7	582.6	577.2
32.5°	605.2	602.8	599.2	595.1	589.1	586.8	583.2	574.3	564.2	557.0	548.7
35°	582.0	579.6	574.3	570.1	561.8	559.4	555.8	548.1	536.8	528.5	521.4
37.5°	556.4	553.5	549.3	543.4	536.2	533.3	528.5	520.8	507.7	499.4	490.5
40°	531.5	527.3	522.6	516.0	508.9	505.9	501.7	490.5	479.8	470.2	462.5
42.5°	506.5	501.7	495.8	489.9	482.1	478.0	473.2	462.5	450.6	441.7	431.0
45°	478.6	475.0	469.0	461.9	453.0	450.0	444.7	433.4	421.5	412.0	401.3
47.5°	451.2	447.1	441.1	434.0	425.1	420.9	415.5	404.3	392.4	380.5	371.0
50°	423.3	419.1	412.0	404.8	396.5	391.2	386.4	375.1	362.0	351.3	339.5
52.5°	393.5	390.0	384.0	376.9	366.2	362.0	357.3	344.8	332.3	319.8	309.1
55°	365.0	362.6	355.5	348.4	337.1	332.3	327.6	314.5	302.0	289.5	279.4
57.5°	335.3	333.5	326.4	318.1	307.9	303.2	297.2	284.2	272.3	259.8	249.1
60°	305.6	303.8	296.6	288.3	278.8	272.9	266.3	256.2	242.6	231.3	219.4
62.5°	277.0	274.7	268.7	259.8	249.1	243.1	237.2	225.3	212.8	200.9	190.2
65°	247.9	244.9	237.8	228.9	218.8	213.4	207.5	196.2	183.7	172.4	162.3
67.5°	218.8	215.8	208.1	200.9	189.0	183.7	178.3	167.1	155.2	143.9	134.4
70°	189.0	186.1	180.1	170.6	160.5	155.2	149.8	137.9	127.2	118.9	110.0
72.5°	159.9	157.5	151.6	142.7	133.2	127.8	121.9	111.8	102.3	93.3	86.8
75°	132.0	128.4	123.1	114.7	105.2	100.5	96.3	86.2	77.3	71.3	66.0
77.5°	105.2	101.1	95.1	88.6	79.7	74.9	70.7	62.4	56.5	52.3	51.1
80°	77.3	76.7	70.7	63.6	55.9	52.3	48.2	42.8	41.0	40.4	39.2
82.5°	54.1	51.7	47.0	40.4	34.5	32.1	30.9	29.7	28.5	28.5	27.3
85°	32.7	30.3	26.2	20.8	19.6	19.0	18.4	18.4	17.8	17.2	17.2
87.5°	14.3	11.9	8.9	8.3	7.7	7.7	8.3	8.3	8.3	7.7	7.7
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°	774.0	774.0	774.0	774.0	774.0	774.0	774.0	774.0	774.0	774.0
2.5°	768.1	771.0	772.8	773.4	773.4	773.4	774.0	774.0	773.4	772.8
5°	763.9	766.9	768.1	769.3	769.3	769.3	769.3	769.3	768.7	767.5
7.5°	757.4	759.2	760.9	760.3	760.3	759.8	759.2	759.8	758.6	758.6
10°	745.5	747.3	748.5	746.7	746.7	747.3	747.3	746.7	744.9	743.1
12.5°	731.8	733.6	731.8	732.4	731.2	730.0	729.4	728.8	727.1	725.9
15°	714.0	714.0	712.8	712.8	711.0	708.6	708.0	708.6	706.2	706.2
17.5°	694.4	693.2	691.4	690.2	689.6	689.6	687.2	687.2	684.3	683.7
20°	673.0	671.8	670.0	667.0	665.8	666.4	664.0	662.3	660.5	659.9
22.5°	650.4	647.4	645.6	642.6	640.3	640.3	638.5	635.5	633.7	631.9
25°	624.8	621.8	618.3	615.9	614.1	611.1	609.9	607.6	605.8	605.2
27.5°	598.6	593.9	589.1	586.8	585.6	582.0	580.2	579.0	575.5	574.9
30°	570.7	567.1	561.2	557.0	554.1	554.7	550.5	548.1	546.3	544.5
32.5°	544.0	538.0	532.1	526.7	523.1	522.6	518.4	516.0	514.2	512.4
35°	513.6	507.7	500.6	495.8	492.2	490.5	486.3	485.1	482.1	480.9
37.5°	483.3	476.8	469.6	463.7	461.3	457.2	455.4	452.4	450.0	450.0
40°	453.6	445.9	438.7	431.6	428.6	426.2	421.5	419.1	416.1	414.4
42.5°	422.7	413.8	407.2	400.7	396.5	394.7	389.4	386.4	383.4	382.8
45°	391.8	382.8	374.5	368.0	366.2	362.6	357.3	353.1	352.5	351.9
47.5°	360.3	351.3	343.6	336.5	334.1	329.9	326.4	323.4	319.8	318.1
50°	329.9	321.0	312.7	305.0	302.0	298.4	294.9	290.7	289.5	287.7
52.5°	299.6	289.5	280.6	273.5	271.1	268.1	264.0	260.4	258.6	257.4
55°	268.7	258.6	250.9	243.7	240.8	239.0	234.2	231.3	228.9	227.7
57.5°	238.4	228.3	221.1	215.8	211.6	209.9	205.1	202.1	200.9	200.3
60°	209.9	200.3	192.6	187.3	183.7	181.9	178.3	175.4	173.6	173.0
62.5°	181.3	173.0	165.9	160.5	158.1	155.8	152.8	150.4	148.6	148.6
65°	154.0	145.6	139.1	134.9	132.6	131.4	127.8	126.6	124.8	124.8
67.5°	127.2	121.3	116.5	111.2	109.4	109.4	105.8	104.6	103.4	103.4
70°	104.0	98.7	93.3	90.4	88.6	88.0	85.0	83.2	82.0	80.9
72.5°	81.4	76.7	71.9	71.3	71.3	70.7	70.7	69.6	69.6	70.1
75°	62.4	61.2	60.0	60.0	59.4	58.9	58.9	58.3	58.3	58.3
77.5°	49.9	49.3	48.7	48.2	48.2	47.6	47.0	47.0	47.0	47.0
80°	38.0	37.5	37.5	36.9	36.3	36.9	36.3	36.3	35.7	35.7
82.5°	26.8	26.8	26.8	26.2	26.2	26.2	26.2	25.6	25.6	26.2
85°	16.6	16.6	16.6	16.6	16.1	16.6	16.1	16.1	16.1	16.6
87.5°	7.1	7.7	7.1	7.7	7.7	7.1	7.1	7.1	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

(END OF REPORT)