

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: P243400

Luminaire Tested: **S123RDR-H560D840-X4F0-XX-UDD-F-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243400  
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-H560D840-X4F0-XX-UDD-F-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

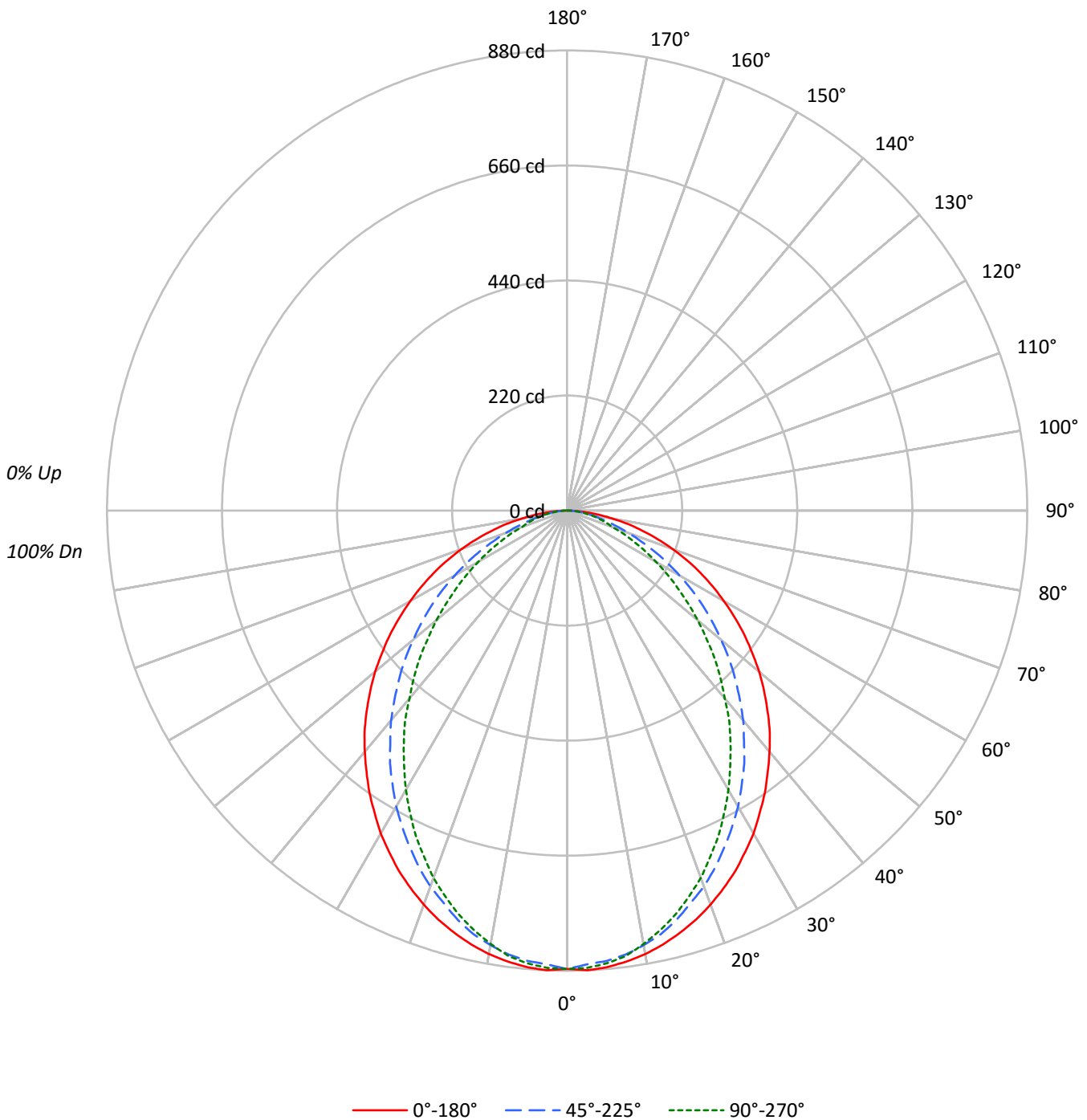
Lumens per Lamp: N/A  
Luminaire Lumens: 1979.2 lumens  
Efficiency: N/A  
Efficacy: 115.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22  
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 17.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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



TEST NUMBER: P243400

CATALOG NUMBER: S123RDR-H560D840-X4F0-XX-UDD-F-W

### Luminous Intensity Polar Plot





TEST NUMBER: P243400

CATALOG NUMBER: S123RDR-H560D840-X4F0-XX-UDD-F-W

**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°	10625	10625	10625
5°	10666	10519	10576
10°	10599	10383	10359
15°	10485	10163	10037
20°	10343	9865	9640
25°	10175	9509	9167
30°	9979	9149	8632
35°	9753	8736	8060
40°	9524	8288	7426
45°	9291	7789	6833
50°	9040	7249	6146
55°	8736	6686	5450
60°	8390	6022	4749
65°	8051	5272	4056
70°	7588	4416	3246
75°	7002	3498	3091
80°	6108	3099	2820
85°	5146	2712	2629



TEST NUMBER: P243400

CATALOG NUMBER: S123RDR-H560D840-X4F0-XX-UDD-F-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	82.5	4.2
10°-20°	229.6	11.6
20°-30°	330.5	16.7
30°-40°	372.3	18.8
40°-50°	355.6	18.0
50°-60°	290.8	14.7
60°-70°	195.3	9.9
70°-80°	97.4	4.9
80°-90°	25.2	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°	642.5	32.5
0°-40°	1014.8	51.3
0°-60°	1661.3	83.9
0°-90°	1979.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1979.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	877	877	877	877	877	
5°	877	873	864	871	869	83
15°	836	830	810	805	800	236
25°	761	744	711	696	685	350
35°	659	634	590	558	545	412
45°	542	510	454	415	399	418
55°	413	376	316	273	258	369
65°	281	242	184	150	141	278
75°	150	114	75	67	66	158
85°	37	22	20	18	19	43
90°	0	0	0	0	0	



TEST NUMBER: P243400

CATALOG NUMBER: S123RDR-H560D840-X4F0-XX-UDD-F-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	876.6	876.6	876.6	876.6	876.6	876.6	876.6	876.6	876.6	876.6	876.6
2.5°	879.9	877.9	875.2	875.9	876.6	877.3	877.3	876.6	874.6	871.9	868.5
5°	876.6	874.6	871.9	871.9	873.2	873.2	873.2	872.5	870.5	867.8	864.5
7.5°	869.8	868.5	865.1	865.8	866.5	866.5	866.5	865.8	863.1	859.7	856.4
10°	861.1	859.1	856.4	856.4	857.1	857.1	857.1	855.7	852.3	848.3	843.6
12.5°	849.7	847.6	844.9	844.9	844.9	844.9	844.9	842.9	837.5	833.5	829.5
15°	835.5	833.5	830.8	830.8	830.1	829.5	828.1	824.7	820.0	815.3	809.9
17.5°	820.0	817.3	814.0	813.3	812.6	811.9	809.9	807.9	801.2	794.4	786.4
20°	801.8	799.2	795.8	795.1	793.1	791.1	789.7	785.7	778.3	770.2	764.8
22.5°	781.7	779.0	775.6	774.2	770.2	768.9	766.8	760.8	752.7	745.3	739.2
25°	760.8	757.4	753.4	751.4	746.6	743.9	743.3	734.5	726.4	718.4	711.0
27.5°	736.5	733.9	730.5	726.4	721.7	718.4	717.0	708.9	698.8	689.4	682.7
30°	713.0	708.9	705.6	700.9	694.1	690.8	688.1	680.0	671.2	659.8	653.7
32.5°	685.4	682.7	678.6	673.9	667.2	664.5	660.5	650.4	638.9	630.8	621.4
35°	659.1	656.4	650.4	645.7	636.2	633.5	629.5	620.7	608.0	598.5	590.4
37.5°	630.2	626.8	622.1	615.4	607.3	603.9	598.5	589.8	575.0	565.5	555.4
40°	601.9	597.2	591.8	584.4	576.3	572.9	568.2	555.4	543.3	532.5	523.8
42.5°	573.6	568.2	561.5	554.8	546.0	541.3	535.9	523.8	510.3	500.2	488.1
45°	542.0	537.9	531.2	523.1	513.0	509.7	503.6	490.8	477.3	466.6	454.4
47.5°	511.0	506.3	499.6	491.5	481.4	476.7	470.6	457.8	444.3	430.9	420.1
50°	479.4	474.6	466.6	458.5	449.1	443.0	437.6	424.8	410.0	397.9	384.4
52.5°	445.7	441.7	434.9	426.8	414.7	410.0	404.6	390.5	376.4	362.2	350.1
55°	413.4	410.7	402.6	394.5	381.7	376.4	371.0	356.2	342.0	327.9	316.4
57.5°	379.7	377.7	369.6	360.2	348.7	343.4	336.6	321.8	308.4	294.2	282.1
60°	346.1	344.0	336.0	326.5	315.8	309.0	301.6	290.2	274.7	261.9	248.4
62.5°	313.7	311.0	304.3	294.2	282.1	275.4	268.6	255.2	241.0	227.6	215.4
65°	280.7	277.4	269.3	259.2	247.8	241.7	235.0	222.2	208.0	195.2	183.8
67.5°	247.8	244.4	235.6	227.6	214.1	208.0	202.0	189.2	175.7	162.9	152.2
70°	214.1	210.7	204.0	193.2	181.8	175.7	169.7	156.2	144.1	134.7	124.6
72.5°	181.1	178.4	171.7	161.6	150.8	144.8	138.0	126.6	115.8	105.7	98.3
75°	149.5	145.4	139.4	129.9	119.2	113.8	109.1	97.6	87.5	80.8	74.7
77.5°	119.2	114.5	107.7	100.3	90.2	84.8	80.1	70.7	64.0	59.2	57.9
80°	87.5	86.9	80.1	72.0	63.3	59.2	54.5	48.5	46.5	45.8	44.4
82.5°	61.3	58.6	53.2	45.8	39.0	36.4	35.0	33.7	32.3	32.3	31.0
85°	37.0	34.3	29.6	23.6	22.2	21.5	20.9	20.9	20.2	19.5	19.5
87.5°	16.2	13.5	10.1	9.4	8.8	8.8	9.4	9.4	9.4	8.8	8.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P243400

CATALOG NUMBER: S123RDR-H560D840-X4F0-XX-UDD-F-W

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	876.6	876.6	876.6	876.6	876.6	876.6	876.6	876.6	876.6	876.6
2.5°	869.8	873.2	875.2	875.9	875.9	875.9	876.6	876.6	875.9	875.2
5°	865.1	868.5	869.8	871.2	871.2	871.2	871.2	871.2	870.5	869.2
7.5°	857.7	859.7	861.8	861.1	861.1	860.4	859.7	860.4	859.1	859.1
10°	844.3	846.3	847.6	845.6	845.6	846.3	846.3	845.6	843.6	841.6
12.5°	828.8	830.8	828.8	829.5	828.1	826.8	826.1	825.4	823.4	822.0
15°	808.6	808.6	807.2	807.2	805.2	802.5	801.8	802.5	799.8	799.8
17.5°	786.4	785.0	783.0	781.7	781.0	781.0	778.3	778.3	774.9	774.2
20°	762.1	760.8	758.8	755.4	754.0	754.7	752.0	750.0	748.0	747.3
22.5°	736.5	733.2	731.2	727.8	725.1	725.1	723.1	719.7	717.7	715.7
25°	707.6	704.2	700.2	697.5	695.5	692.1	690.8	688.1	686.0	685.4
27.5°	678.0	672.6	667.2	664.5	663.2	659.1	657.1	655.8	651.7	651.0
30°	646.3	642.3	635.6	630.8	627.5	628.1	623.4	620.7	618.7	616.7
32.5°	616.0	609.3	602.6	596.5	592.5	591.8	587.1	584.4	582.4	580.3
35°	581.7	575.0	566.9	561.5	557.5	555.4	550.7	549.4	546.0	544.7
37.5°	547.4	540.0	531.9	525.1	522.4	517.7	515.7	512.3	509.7	509.7
40°	513.7	504.9	496.9	488.8	485.4	482.7	477.3	474.6	471.3	469.3
42.5°	478.7	468.6	461.2	453.8	449.1	447.0	441.0	437.6	434.3	433.6
45°	443.7	433.6	424.2	416.7	414.7	410.7	404.6	399.9	399.2	398.6
47.5°	408.0	397.9	389.1	381.1	378.4	373.7	369.6	366.3	362.2	360.2
50°	373.7	363.6	354.1	345.4	342.0	338.0	333.9	329.2	327.9	325.9
52.5°	339.3	327.9	317.8	309.7	307.0	303.6	298.9	294.9	292.9	291.5
55°	304.3	292.9	284.1	276.0	272.7	270.6	265.3	261.9	259.2	257.9
57.5°	270.0	258.5	250.5	244.4	239.7	237.7	232.3	228.9	227.6	226.9
60°	237.7	226.9	218.1	212.1	208.0	206.0	202.0	198.6	196.6	195.9
62.5°	205.3	195.9	187.8	181.8	179.1	176.4	173.0	170.3	168.3	168.3
65°	174.4	164.9	157.5	152.8	150.1	148.8	144.8	143.4	141.4	141.4
67.5°	144.1	137.3	132.0	125.9	123.9	123.9	119.8	118.5	117.1	117.1
70°	117.8	111.8	105.7	102.3	100.3	99.6	96.3	94.3	92.9	91.6
72.5°	92.2	86.9	81.5	80.8	80.8	80.1	80.1	78.8	78.8	79.4
75°	70.7	69.3	68.0	68.0	67.3	66.7	66.7	66.0	66.0	66.0
77.5°	56.6	55.9	55.2	54.5	54.5	53.9	53.2	53.2	53.2	53.2
80°	43.1	42.4	42.4	41.7	41.1	41.7	41.1	41.1	40.4	40.4
82.5°	30.3	30.3	30.3	29.6	29.6	29.6	29.6	29.0	29.0	29.6
85°	18.9	18.9	18.9	18.9	18.2	18.9	18.2	18.2	18.2	18.9
87.5°	8.1	8.8	8.1	8.8	8.8	8.1	8.1	8.1	8.1	8.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)