

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: P243386

Luminaire Tested: S123RDRP-H560D927-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243386
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
Product Line: NEO-RAY
Catalog Number: S123RDRP-H560D927-X4F0-XX-UDD-F-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

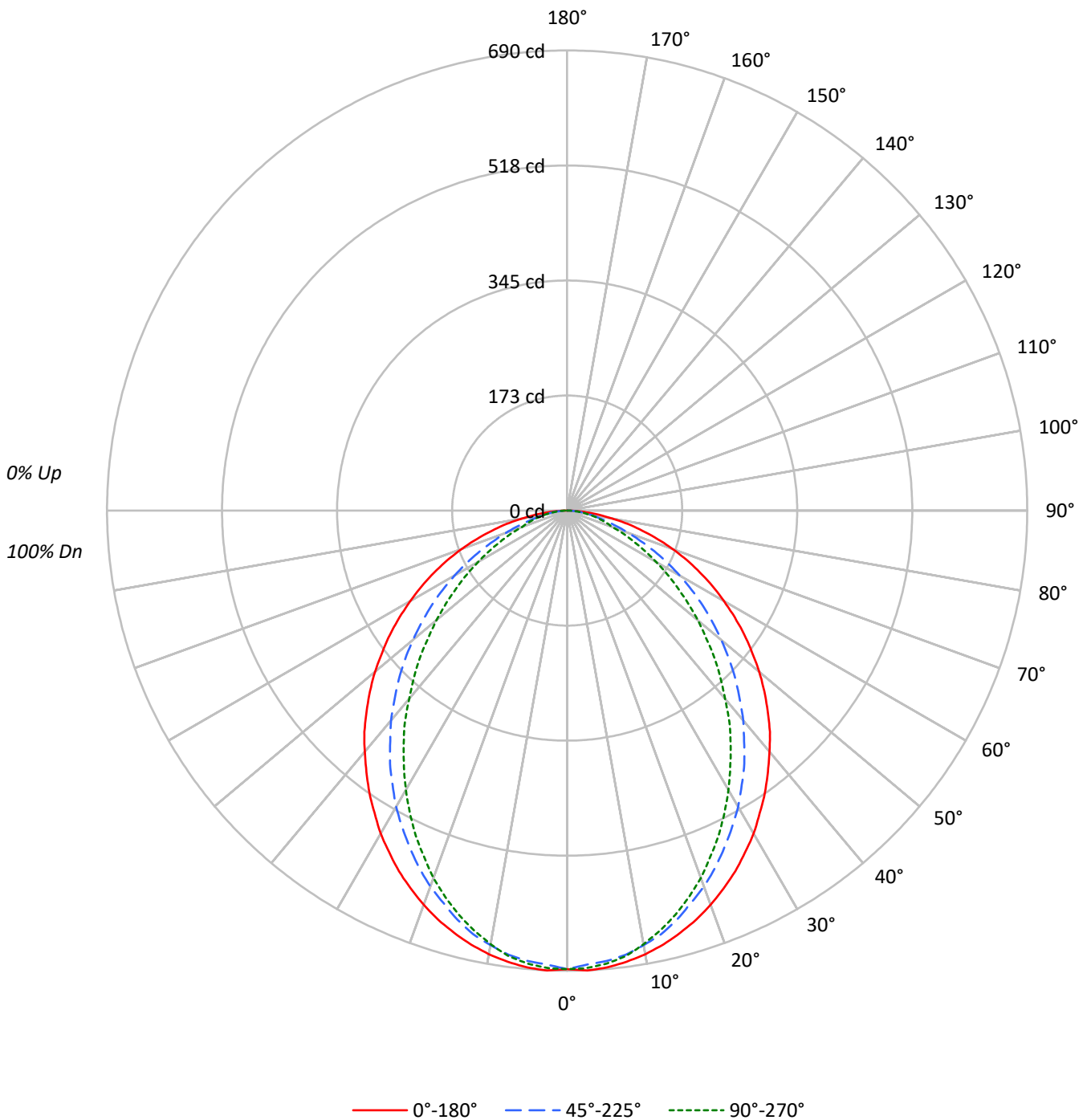
Lumens per Lamp: N/A
Luminaire Lumens: 1552.5 lumens
Efficiency: N/A
Efficacy: 90.3 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

Input Watts (W): 17.2
Input Voltage (V): 120
Input Current (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

TEST NUMBER: P243386

CATALOG NUMBER: S123RDRP-H560D927-X4F0-XX-UDD-F-W

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	50	30	10	0																			
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	8335	8335	8335
5°	8366	8251	8296
10°	8314	8144	8126
15°	8224	7972	7873
20°	8114	7739	7561
25°	7982	7459	7190
30°	7828	7177	6771
35°	7650	6854	6323
40°	7472	6502	5824
45°	7287	6111	5360
50°	7090	5687	4820
55°	6853	5245	4275
60°	6582	4725	3726
65°	6316	4136	3181
70°	5950	3462	2545
75°	5489	2744	2426
80°	4795	2436	2213
85°	4033	2128	2058

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 7287 cd/sqm



TEST NUMBER: P243386

CATALOG NUMBER: S123RDRP-H560D927-X4F0-XX-UDD-F-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	64.7	4.2
10°-20°	180.1	11.6
20°-30°	259.3	16.7
30°-40°	292.0	18.8
40°-50°	279.0	18.0
50°-60°	228.1	14.7
60°-70°	153.2	9.9
70°-80°	76.4	4.9
80°-90°	19.8	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°	504.0	32.5
0°-40°	796.1	51.3
0°-60°	1303.2	83.9
0°-90°	1552.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1552.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	688	688	688	688	688	
5°	688	685	678	683	682	65
15°	655	651	635	632	627	185
25°	597	584	558	546	538	275
35°	517	497	463	437	427	323
45°	425	400	356	325	313	328
55°	324	295	248	214	202	290
65°	220	190	144	118	111	218
75°	117	89	59	53	52	124
85°	29	17	15	14	15	34
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°	687.6	687.6	687.6	687.6	687.6	687.6	687.6	687.6	687.6	687.6	687.6
2.5°	690.3	688.7	686.6	687.1	687.6	688.2	688.2	687.6	686.0	683.9	681.3
5°	687.6	686.0	683.9	683.9	685.0	685.0	685.0	684.5	682.9	680.8	678.1
7.5°	682.3	681.3	678.7	679.2	679.7	679.7	679.7	679.2	677.1	674.4	671.8
10°	675.5	673.9	671.8	671.8	672.3	672.3	672.3	671.3	668.6	665.4	661.7
12.5°	666.5	664.9	662.8	662.8	662.8	662.8	662.8	661.2	657.0	653.8	650.7
15°	655.4	653.8	651.7	651.7	651.2	650.7	649.6	647.0	643.3	639.6	635.3
17.5°	643.3	641.2	638.5	638.0	637.5	636.9	635.3	633.8	628.5	623.2	616.9
20°	629.0	626.9	624.3	623.7	622.1	620.6	619.5	616.3	610.5	604.2	600.0
22.5°	613.2	611.0	608.4	607.4	604.2	603.1	601.5	596.8	590.5	584.6	579.9
25°	596.8	594.1	591.0	589.4	585.7	583.6	583.1	576.2	569.9	563.5	557.7
27.5°	577.8	575.7	573.0	569.9	566.2	563.5	562.5	556.1	548.2	540.8	535.5
30°	559.3	556.1	553.5	549.8	544.5	541.9	539.8	533.4	526.5	517.6	512.8
32.5°	537.6	535.5	532.4	528.7	523.4	521.3	518.1	510.2	501.2	494.9	487.5
35°	517.0	514.9	510.2	506.5	499.1	497.0	493.8	486.9	476.9	469.5	463.2
37.5°	494.3	491.7	488.0	482.7	476.4	473.7	469.5	462.6	451.0	443.6	435.7
40°	472.2	468.5	464.2	458.4	452.1	449.4	445.7	435.7	426.2	417.8	410.9
42.5°	450.0	445.7	440.5	435.2	428.3	424.6	420.4	410.9	400.3	392.4	382.9
45°	425.1	422.0	416.7	410.4	402.4	399.8	395.0	385.0	374.4	366.0	356.5
47.5°	400.9	397.2	391.9	385.5	377.6	373.9	369.2	359.1	348.6	338.0	329.6
50°	376.0	372.3	366.0	359.7	352.3	347.5	343.3	333.3	321.6	312.1	301.6
52.5°	349.6	346.5	341.2	334.8	325.3	321.6	317.4	306.3	295.2	284.1	274.6
55°	324.3	322.2	315.8	309.5	299.5	295.2	291.0	279.4	268.3	257.2	248.2
57.5°	297.9	296.3	289.9	282.6	273.6	269.3	264.1	252.4	241.9	230.8	221.3
60°	271.5	269.9	263.5	256.1	247.7	242.4	236.6	227.6	215.5	205.4	194.9
62.5°	246.1	244.0	238.7	230.8	221.3	216.0	210.7	200.2	189.1	178.5	169.0
65°	220.2	217.6	211.3	203.3	194.4	189.6	184.3	174.3	163.2	153.2	144.2
67.5°	194.4	191.7	184.8	178.5	167.9	163.2	158.4	148.4	137.8	127.8	119.4
70°	167.9	165.3	160.0	151.6	142.6	137.8	133.1	122.5	113.0	105.6	97.7
72.5°	142.1	140.0	134.7	126.8	118.3	113.5	108.3	99.3	90.8	82.9	77.1
75°	117.2	114.1	109.3	101.9	93.5	89.3	85.6	76.6	68.7	63.4	58.6
77.5°	93.5	89.8	84.5	78.7	70.8	66.5	62.8	55.5	50.2	46.5	45.4
80°	68.7	68.1	62.8	56.5	49.6	46.5	42.8	38.0	36.4	35.9	34.9
82.5°	48.1	45.9	41.7	35.9	30.6	28.5	27.5	26.4	25.4	25.4	24.3
85°	29.0	26.9	23.2	18.5	17.4	16.9	16.4	16.4	15.8	15.3	15.3
87.5°	12.7	10.6	7.9	7.4	6.9	6.9	7.4	7.4	7.4	6.9	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



TEST NUMBER: P243386

CATALOG NUMBER: S123RDRP-H560D927-X4F0-XX-UDD-F-W

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	687.6	687.6	687.6	687.6	687.6	687.6	687.6	687.6	687.6	687.6
2.5°	682.3	685.0	686.6	687.1	687.1	687.1	687.6	687.6	687.1	686.6
5°	678.7	681.3	682.3	683.4	683.4	683.4	683.4	683.4	682.9	681.8
7.5°	672.8	674.4	676.0	675.5	675.5	675.0	674.4	675.0	673.9	673.9
10°	662.3	663.9	664.9	663.3	663.3	663.9	663.9	663.3	661.7	660.2
12.5°	650.1	651.7	650.1	650.7	649.6	648.5	648.0	647.5	645.9	644.8
15°	634.3	634.3	633.2	633.2	631.6	629.5	629.0	629.5	627.4	627.4
17.5°	616.9	615.8	614.2	613.2	612.6	612.6	610.5	610.5	607.9	607.4
20°	597.8	596.8	595.2	592.6	591.5	592.0	589.9	588.3	586.8	586.2
22.5°	577.8	575.1	573.6	570.9	568.8	568.8	567.2	564.6	563.0	561.4
25°	555.1	552.4	549.3	547.1	545.6	542.9	541.9	539.8	538.2	537.6
27.5°	531.8	527.6	523.4	521.3	520.2	517.0	515.5	514.4	511.2	510.7
30°	507.0	503.8	498.6	494.9	492.2	492.7	489.1	486.9	485.4	483.8
32.5°	483.2	478.0	472.7	467.9	464.8	464.2	460.5	458.4	456.8	455.3
35°	456.3	451.0	444.7	440.5	437.3	435.7	432.0	431.0	428.3	427.3
37.5°	429.4	423.6	417.2	411.9	409.8	406.1	404.5	401.9	399.8	399.8
40°	403.0	396.1	389.8	383.4	380.8	378.7	374.4	372.3	369.7	368.1
42.5°	375.5	367.6	361.8	356.0	352.3	350.7	345.9	343.3	340.6	340.1
45°	348.0	340.1	332.7	326.9	325.3	322.2	317.4	313.7	313.2	312.7
47.5°	320.0	312.1	305.3	298.9	296.8	293.1	289.9	287.3	284.1	282.6
50°	293.1	285.2	277.8	270.9	268.3	265.1	262.0	258.3	257.2	255.6
52.5°	266.2	257.2	249.3	242.9	240.8	238.2	234.5	231.3	229.7	228.7
55°	238.7	229.7	222.9	216.5	213.9	212.3	208.1	205.4	203.3	202.3
57.5°	211.8	202.8	196.5	191.7	188.0	186.4	182.2	179.6	178.5	178.0
60°	186.4	178.0	171.1	166.4	163.2	161.6	158.4	155.8	154.2	153.7
62.5°	161.1	153.7	147.3	142.6	140.5	138.4	135.7	133.6	132.0	132.0
65°	136.8	129.4	123.6	119.9	117.8	116.7	113.5	112.5	110.9	110.9
67.5°	113.0	107.7	103.5	98.8	97.2	97.2	94.0	93.0	91.9	91.9
70°	92.4	87.7	82.9	80.3	78.7	78.2	75.5	73.9	72.9	71.8
72.5°	72.4	68.1	63.9	63.4	63.4	62.8	62.8	61.8	61.8	62.3
75°	55.5	54.4	53.3	53.3	52.8	52.3	52.3	51.8	51.8	51.8
77.5°	44.4	43.8	43.3	42.8	42.8	42.3	41.7	41.7	41.7	41.7
80°	33.8	33.3	33.3	32.7	32.2	32.7	32.2	32.2	31.7	31.7
82.5°	23.8	23.8	23.8	23.2	23.2	23.2	23.2	22.7	22.7	23.2
85°	14.8	14.8	14.8	14.8	14.3	14.8	14.3	14.3	14.3	14.8
87.5°	6.3	6.9	6.3	6.9	6.9	6.3	6.3	6.3	6.3	6.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P243386
 CATALOG NUMBER: S123RDRP-H560D927-X4F0-XX-UDD-F-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	18.89	20.45	19.26	20.76	21.07	16.08	17.64	16.45	17.95	18.27
	3H	20.72	22.12	21.10	22.44	22.80	17.16	18.56	17.54	18.88	19.24
	4H	21.41	22.72	21.80	23.06	23.44	17.56	18.87	17.96	19.22	19.59
	6H	21.90	23.12	22.32	23.48	23.87	17.88	19.09	18.29	19.46	19.85
	8H	22.06	23.22	22.49	23.61	24.01	17.99	19.14	18.41	19.53	19.93
	12H	22.16	23.27	22.59	23.65	24.08	18.06	19.17	18.49	19.55	19.98
4H	2H	19.13	20.44	19.53	20.79	21.17	16.80	18.11	17.20	18.46	18.84
	3H	21.12	22.21	21.53	22.61	23.01	18.03	19.12	18.44	19.51	19.92
	4H	21.91	22.89	22.34	23.31	23.75	18.51	19.49	18.94	19.91	20.35
	6H	22.53	23.38	22.99	23.83	24.28	18.93	19.79	19.39	20.23	20.69
	8H	22.73	23.53	23.19	23.97	24.44	19.08	19.88	19.54	20.32	20.79
	12H	22.88	23.59	23.36	24.07	24.54	19.19	19.90	19.67	20.38	20.85
8H	4H	21.95	22.75	22.41	23.19	23.66	18.83	19.63	19.29	20.07	20.54
	6H	22.62	23.28	23.11	23.77	24.24	19.34	20.01	19.84	20.50	20.97
	8H	22.86	23.45	23.37	23.96	24.45	19.55	20.14	20.06	20.65	21.14
	12H	23.05	23.57	23.56	24.06	24.63	19.72	20.25	20.23	20.74	21.30
12H	4H	21.94	22.65	22.42	23.13	23.60	18.87	19.58	19.35	20.06	20.53
	6H	22.60	23.19	23.11	23.70	24.19	19.40	19.99	19.91	20.50	20.99
	8H	22.88	23.40	23.39	23.89	24.46	19.66	20.18	20.17	20.67	21.24