

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: P243391

Luminaire Tested: S123RDRP-H560D830-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243391
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-H560D830-X4F0-XX-UDD-F-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

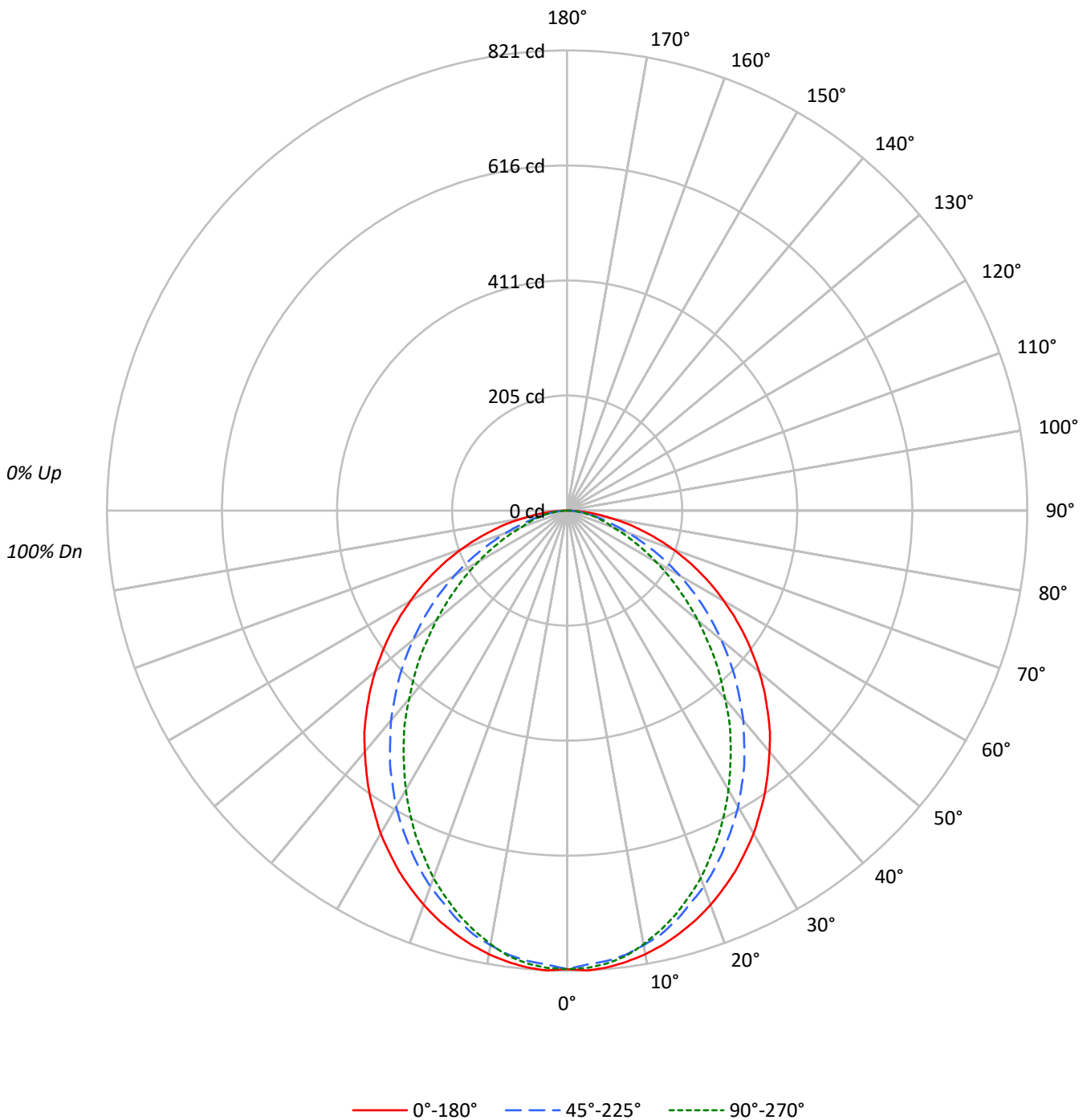
Lumens per Lamp: N/A
Luminaire Lumens: 1847.2 lumens
Efficiency: N/A
Efficacy: 107.4 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

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: 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	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°	9916	9916	9916
5°	9954	9817	9870
10°	9892	9691	9668
15°	9786	9486	9368
20°	9654	9207	8997
25°	9497	8875	8556
30°	9313	8541	8056
35°	9103	8155	7523
40°	8889	7736	6931
45°	8670	7272	6377
50°	8437	6766	5734
55°	8153	6240	5087
60°	7830	5622	4434
65°	7514	4919	3786
70°	7081	4118	3030
75°	6533	3264	2885
80°	5703	2897	2632
85°	4812	2531	2448

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 8670 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	77.0	4.2
10°-20°	214.3	11.6
20°-30°	308.5	16.7
30°-40°	347.5	18.8
40°-50°	331.9	18.0
50°-60°	271.4	14.7
60°-70°	182.3	9.9
70°-80°	90.9	4.9
80°-90°	23.5	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°	599.7	32.5
0°-40°	947.2	51.3
0°-60°	1550.5	83.9
0°-90°	1847.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1847.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	818	818	818	818	818	
5°	818	815	807	813	811	78
15°	780	774	756	752	746	220
25°	710	694	664	649	640	327
35°	615	591	551	520	508	385
45°	506	476	424	387	372	390
55°	386	351	295	254	241	345
65°	262	226	172	140	132	259
75°	140	106	70	63	62	148
85°	35	20	18	17	18	40
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°	818.1	818.1	818.1	818.1	818.1	818.1	818.1	818.1	818.1	818.1	818.1
2.5°	821.3	819.4	816.9	817.5	818.1	818.8	818.8	818.1	816.3	813.7	810.6
5°	818.1	816.3	813.7	813.7	815.0	815.0	815.0	814.4	812.5	810.0	806.8
7.5°	811.9	810.6	807.5	808.1	808.7	808.7	808.7	808.1	805.6	802.4	799.3
10°	803.7	801.8	799.3	799.3	799.9	799.9	799.9	798.7	795.5	791.8	787.4
12.5°	793.0	791.1	788.6	788.6	788.6	788.6	788.6	786.7	781.7	777.9	774.2
15°	779.8	777.9	775.4	775.4	774.8	774.2	772.9	769.8	765.4	761.0	755.9
17.5°	765.4	762.8	759.7	759.1	758.4	757.8	755.9	754.0	747.8	741.5	733.9
20°	748.4	745.9	742.7	742.1	740.2	738.3	737.1	733.3	726.4	718.9	713.8
22.5°	729.5	727.0	723.9	722.6	718.9	717.6	715.7	710.1	702.5	695.6	690.0
25°	710.1	706.9	703.2	701.3	696.9	694.4	693.7	685.6	678.0	670.5	663.6
27.5°	687.4	684.9	681.8	678.0	673.6	670.5	669.2	661.7	652.3	643.5	637.2
30°	665.4	661.7	658.5	654.1	647.9	644.7	642.2	634.7	626.5	615.8	610.2
32.5°	639.7	637.2	633.4	629.0	622.7	620.2	616.4	607.0	596.3	588.8	580.0
35°	615.2	612.7	607.0	602.6	593.8	591.3	587.5	579.4	567.4	558.6	551.1
37.5°	588.2	585.0	580.6	574.3	566.8	563.7	558.6	550.5	536.6	527.8	518.4
40°	561.8	557.4	552.3	545.4	537.9	534.7	530.3	518.4	507.1	497.0	488.9
42.5°	535.4	530.3	524.1	517.8	509.6	505.2	500.2	488.9	476.3	466.9	455.6
45°	505.8	502.1	495.8	488.2	478.8	475.7	470.0	458.1	445.5	435.5	424.2
47.5°	476.9	472.5	466.3	458.7	449.3	444.9	439.2	427.3	414.7	402.2	392.1
50°	447.4	443.0	435.5	427.9	419.1	413.5	408.4	396.5	382.7	371.4	358.8
52.5°	416.0	412.2	405.9	398.4	387.1	382.7	377.7	364.5	351.3	338.1	326.8
55°	385.8	383.3	375.8	368.2	356.3	351.3	346.2	332.4	319.2	306.0	295.3
57.5°	354.4	352.5	345.0	336.2	325.5	320.5	314.2	300.4	287.8	274.6	263.3
60°	323.0	321.1	313.6	304.8	294.7	288.4	281.5	270.8	256.4	244.4	231.9
62.5°	292.8	290.3	284.0	274.6	263.3	257.0	250.7	238.2	225.0	212.4	201.1
65°	262.0	258.9	251.3	241.9	231.2	225.6	219.3	207.4	194.2	182.2	171.5
67.5°	231.2	228.1	219.9	212.4	199.8	194.2	188.5	176.6	164.0	152.1	142.0
70°	199.8	196.7	190.4	180.3	169.7	164.0	158.4	145.8	134.5	125.7	116.2
72.5°	169.0	166.5	160.2	150.8	140.8	135.1	128.8	118.1	108.1	98.7	91.7
75°	139.5	135.7	130.1	121.3	111.2	106.2	101.8	91.1	81.7	75.4	69.7
77.5°	111.2	106.8	100.5	93.6	84.2	79.2	74.8	66.0	59.7	55.3	54.0
80°	81.7	81.1	74.8	67.2	59.1	55.3	50.9	45.2	43.4	42.7	41.5
82.5°	57.2	54.7	49.6	42.7	36.4	33.9	32.7	31.4	30.2	30.2	28.9
85°	34.6	32.0	27.6	22.0	20.7	20.1	19.5	19.5	18.9	18.2	18.2
87.5°	15.1	12.6	9.4	8.8	8.2	8.2	8.8	8.8	8.8	8.2	8.2
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°	818.1	818.1	818.1	818.1	818.1	818.1	818.1	818.1	818.1	818.1
2.5°	811.9	815.0	816.9	817.5	817.5	817.5	818.1	818.1	817.5	816.9
5°	807.5	810.6	811.9	813.1	813.1	813.1	813.1	813.1	812.5	811.2
7.5°	800.5	802.4	804.3	803.7	803.7	803.1	802.4	803.1	801.8	801.8
10°	788.0	789.9	791.1	789.2	789.2	789.9	789.9	789.2	787.4	785.5
12.5°	773.5	775.4	773.5	774.2	772.9	771.6	771.0	770.4	768.5	767.2
15°	754.7	754.7	753.4	753.4	751.5	749.0	748.4	749.0	746.5	746.5
17.5°	733.9	732.7	730.8	729.5	728.9	728.9	726.4	726.4	723.3	722.6
20°	711.3	710.1	708.2	705.0	703.8	704.4	701.9	700.0	698.1	697.5
22.5°	687.4	684.3	682.4	679.3	676.8	676.8	674.9	671.7	669.8	668.0
25°	660.4	657.3	653.5	651.0	649.1	646.0	644.7	642.2	640.3	639.7
27.5°	632.8	627.7	622.7	620.2	618.9	615.2	613.3	612.0	608.3	607.6
30°	603.2	599.5	593.2	588.8	585.6	586.3	581.9	579.4	577.5	575.6
32.5°	575.0	568.7	562.4	556.7	553.0	552.3	547.9	545.4	543.5	541.7
35°	542.9	536.6	529.1	524.1	520.3	518.4	514.0	512.8	509.6	508.4
37.5°	510.9	504.0	496.4	490.1	487.6	483.2	481.3	478.2	475.7	475.7
40°	479.4	471.3	463.7	456.2	453.1	450.5	445.5	443.0	439.9	438.0
42.5°	446.8	437.3	430.4	423.5	419.1	417.2	411.6	408.4	405.3	404.7
45°	414.1	404.7	395.9	389.0	387.1	383.3	377.7	373.3	372.6	372.0
47.5°	380.8	371.4	363.2	355.7	353.1	348.7	345.0	341.8	338.1	336.2
50°	348.7	339.3	330.5	322.4	319.2	315.4	311.7	307.3	306.0	304.1
52.5°	316.7	306.0	296.6	289.1	286.5	283.4	279.0	275.2	273.3	272.1
55°	284.0	273.3	265.2	257.6	254.5	252.6	247.6	244.4	241.9	240.7
57.5°	252.0	241.3	233.8	228.1	223.7	221.8	216.8	213.6	212.4	211.8
60°	221.8	211.8	203.6	197.9	194.2	192.3	188.5	185.4	183.5	182.9
62.5°	191.7	182.9	175.3	169.7	167.1	164.6	161.5	159.0	157.1	157.1
65°	162.7	154.0	147.0	142.6	140.1	138.9	135.1	133.8	132.0	132.0
67.5°	134.5	128.2	123.2	117.5	115.6	115.6	111.9	110.6	109.3	109.3
70°	110.0	104.3	98.7	95.5	93.6	93.0	89.9	88.0	86.7	85.5
72.5°	86.1	81.1	76.0	75.4	75.4	74.8	74.8	73.5	73.5	74.1
75°	66.0	64.7	63.5	63.5	62.8	62.2	62.2	61.6	61.6	61.6
77.5°	52.8	52.2	51.5	50.9	50.9	50.3	49.6	49.6	49.6	49.6
80°	40.2	39.6	39.6	39.0	38.3	39.0	38.3	38.3	37.7	37.7
82.5°	28.3	28.3	28.3	27.6	27.6	27.6	27.6	27.0	27.0	27.6
85°	17.6	17.6	17.6	17.6	17.0	17.6	17.0	17.0	17.0	17.6
87.5°	7.5	8.2	7.5	8.2	8.2	7.5	7.5	7.5	7.5	7.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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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	19.50	21.05	19.86	21.36	21.68	16.69	18.24	17.05	18.56	18.87
	3H	21.32	22.72	21.70	23.05	23.41	17.76	19.16	18.14	19.49	19.85
	4H	22.01	23.32	22.41	23.67	24.05	18.16	19.47	18.56	19.82	20.20
	6H	22.51	23.72	22.92	24.09	24.48	18.48	19.69	18.89	20.06	20.45
	8H	22.67	23.82	23.09	24.21	24.61	18.59	19.75	19.02	20.13	20.54
	12H	22.76	23.87	23.19	24.25	24.68	18.67	19.77	19.10	20.15	20.58
4H	2H	19.74	21.05	20.14	21.40	21.77	17.41	18.72	17.81	19.07	19.44
	3H	21.73	22.82	22.14	23.21	23.62	18.63	19.72	19.04	20.12	20.52
	4H	22.51	23.50	22.95	23.91	24.35	19.12	20.10	19.55	20.51	20.95
	6H	23.13	23.99	23.59	24.43	24.89	19.54	20.39	19.99	20.83	21.29
	8H	23.34	24.13	23.80	24.58	25.04	19.68	20.48	20.14	20.92	21.39
	12H	23.48	24.19	23.96	24.67	25.14	19.79	20.51	20.27	20.99	21.46
8H	4H	22.55	23.35	23.02	23.79	24.26	19.43	20.23	19.90	20.68	21.14
	6H	23.22	23.88	23.71	24.37	24.85	19.95	20.61	20.44	21.10	21.58
	8H	23.46	24.05	23.97	24.56	25.05	20.15	20.75	20.67	21.25	21.74
	12H	23.65	24.18	24.16	24.67	25.23	20.33	20.85	20.84	21.34	21.91
12H	4H	22.54	23.25	23.02	23.73	24.20	19.47	20.19	19.95	20.66	21.13
	6H	23.20	23.80	23.72	24.31	24.79	20.00	20.60	20.52	21.11	21.59
	8H	23.48	24.00	23.99	24.50	25.06	20.26	20.78	20.77	21.28	21.84