

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: P242437

Luminaire Tested: S123DRP-S560D840-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242437
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-11)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DRP-S560D840-X4F0-XX-UDD-F-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

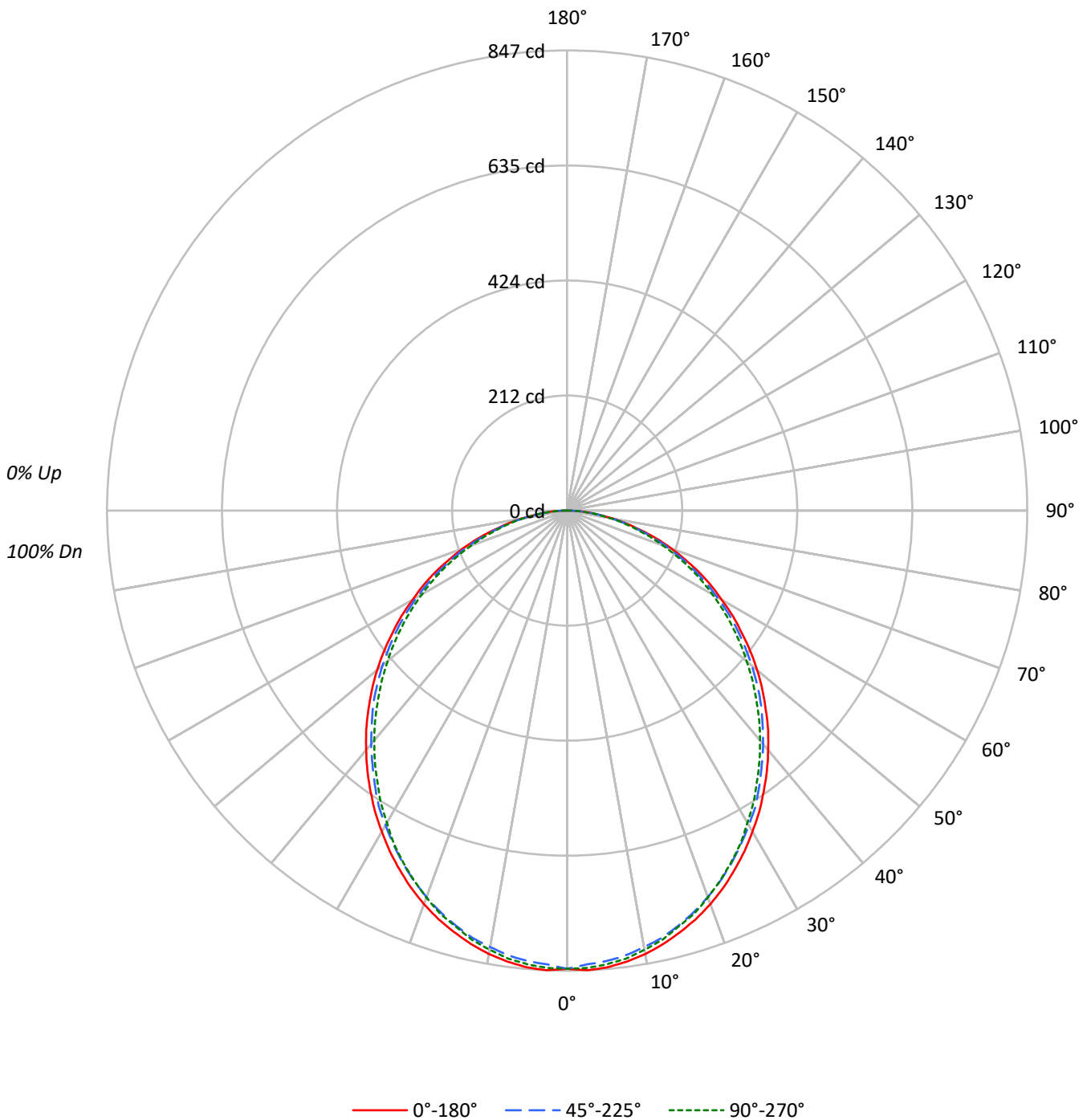
Lumens per Lamp: N/A
Luminaire Lumens: 2194.7 lumens
Efficiency: N/A
Efficacy: 116.7 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.3
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

Input Watts (W): 18.8
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	109	104	100	96	106	102	98	95	98	94	92	94	91	89	90	88	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	70
3	91	80	72	66	88	79	71	65	76	69	64	73	67	63	70	66	62	59
4	83	71	62	56	81	70	62	55	67	60	55	65	59	54	63	58	53	51
5	76	64	55	48	74	63	54	48	60	53	47	58	52	47	57	51	46	44
6	71	57	49	42	69	56	48	42	55	47	42	53	46	41	51	46	41	39
7	66	52	43	37	64	51	43	37	50	42	37	48	42	37	47	41	36	34
8	61	48	39	33	60	47	39	33	46	38	33	44	38	33	43	37	33	31
9	57	44	36	30	56	43	35	30	42	35	30	41	34	30	40	34	30	28
10	54	40	33	27	52	40	32	27	39	32	27	38	32	27	37	31	27	25

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10222	10222	10222
5°	10269	10128	10199
10°	10201	10040	10103
15°	10082	9927	9945
20°	9943	9765	9774
25°	9757	9572	9552
30°	9550	9358	9287
35°	9334	9131	9013
40°	9109	8880	8742
45°	8862	8652	8439
50°	8614	8369	8135
55°	8290	8075	7830
60°	7964	7733	7488
65°	7675	7362	7133
70°	7247	6939	6631
75°	6622	6383	6112
80°	5975	5717	5668
85°	5243	5048	4840

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 8862 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	79.5	3.6
10°-20°	224.5	10.2
20°-30°	331.5	15.1
30°-40°	387.2	17.6
40°-50°	389.3	17.7
50°-60°	341.9	15.6
60°-70°	254.7	11.6
70°-80°	144.9	6.6
80°-90°	41.2	1.9
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°	635.5	29.0
0°-40°	1022.7	46.6
0°-60°	1753.9	79.9
0°-90°	2194.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2194.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	843	843	843	843	843	
5°	844	840	832	840	838	80
15°	803	800	791	797	792	227
25°	730	725	716	716	714	336
35°	631	626	617	613	609	395
45°	517	514	505	496	492	399
55°	392	392	382	374	370	351
65°	268	264	257	251	249	264
75°	141	138	136	133	130	151
85°	38	36	36	35	35	43
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	843.3	843.3	843.3	843.3	843.3
2.5°	846.9	844.0	836.1	843.3	842.6
5°	844.0	840.4	832.4	839.7	838.2
7.5°	837.5	833.9	825.9	832.4	831.7
10°	828.8	825.2	815.7	822.3	820.8
12.5°	817.2	814.3	805.6	809.9	809.2
15°	803.4	800.5	791.1	796.9	792.5
17.5°	788.2	784.6	775.1	779.5	778.0
20°	770.8	766.4	757.0	759.9	757.7
22.5°	751.2	746.9	737.4	739.6	736.7
25°	729.5	725.1	715.7	716.4	714.2
27.5°	707.0	702.6	692.5	693.2	691.0
30°	682.3	678.7	668.6	668.6	663.5
32.5°	657.7	652.6	645.3	640.3	638.1
35°	630.8	626.5	617.1	612.7	609.1
37.5°	604.0	598.2	588.8	583.7	581.5
40°	575.7	571.4	561.2	555.4	552.5
42.5°	547.5	542.4	532.2	526.4	523.5
45°	517.0	514.1	504.7	496.0	492.3
47.5°	487.3	482.9	474.2	465.5	462.6
50°	456.8	453.2	443.8	435.8	431.4
52.5°	424.9	422.7	412.6	406.1	401.7
55°	392.3	391.6	382.1	374.2	370.5
57.5°	361.8	358.9	351.7	344.4	340.1
60°	328.5	327.7	319.0	312.5	308.9
62.5°	298.7	296.6	287.9	281.3	279.2
65°	267.6	263.9	256.7	250.9	248.7
67.5°	234.2	231.3	225.5	220.4	217.5
70°	204.5	200.1	195.8	190.7	187.1
72.5°	173.3	170.4	165.3	161.0	159.5
75°	141.4	138.5	136.3	132.7	130.5
77.5°	113.1	111.7	108.8	105.9	105.9
80°	85.6	83.4	81.9	81.2	81.2
82.5°	58.7	58.7	58.7	57.3	56.6
85°	37.7	36.3	36.3	34.8	34.8
87.5°	18.9	16.7	16.0	15.2	15.2
90°	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	19.43	21.05	19.80	21.37	21.68	19.12	20.74	19.48	21.05	21.37
	3H	21.20	22.67	21.58	22.99	23.35	20.83	22.30	21.21	22.62	22.98
	4H	21.86	23.24	22.26	23.59	23.96	21.47	22.85	21.87	23.20	23.57
	6H	22.35	23.63	22.76	23.99	24.38	21.96	23.24	22.37	23.60	23.99
	8H	22.50	23.72	22.93	24.11	24.51	22.12	23.34	22.54	23.73	24.12
	12H	22.61	23.78	23.04	24.16	24.59	22.22	23.39	22.65	23.77	24.20
4H	2H	20.01	21.39	20.41	21.74	22.11	19.76	21.14	20.16	21.49	21.86
	3H	22.01	23.16	22.42	23.56	23.96	21.70	22.85	22.11	23.25	23.65
	4H	22.79	23.83	23.22	24.25	24.68	22.46	23.51	22.89	23.92	24.35
	6H	23.41	24.32	23.86	24.76	25.22	23.07	23.99	23.53	24.43	24.88
	8H	23.61	24.46	24.07	24.91	25.37	23.28	24.13	23.74	24.58	25.04
	12H	23.76	24.53	24.24	25.00	25.47	23.43	24.20	23.91	24.67	25.14
8H	4H	23.08	23.93	23.54	24.37	24.84	22.78	23.64	23.24	24.08	24.55
	6H	23.81	24.52	24.31	25.01	25.49	23.52	24.23	24.01	24.72	25.19
	8H	24.09	24.72	24.60	25.23	25.72	23.80	24.44	24.31	24.94	25.43
	12H	24.31	24.88	24.82	25.37	25.93	24.02	24.59	24.53	25.08	25.64
12H	4H	23.10	23.87	23.58	24.35	24.82	22.82	23.59	23.30	24.06	24.53
	6H	23.86	24.50	24.37	25.01	25.49	23.58	24.22	24.09	24.72	25.21
	8H	24.20	24.76	24.70	25.25	25.81	23.92	24.48	24.43	24.97	25.53