

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: P243297

Luminaire Tested: S123DRP-H560D840-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243297
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-49)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DRP-H560D840-X4F0-XX-UDD-F-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

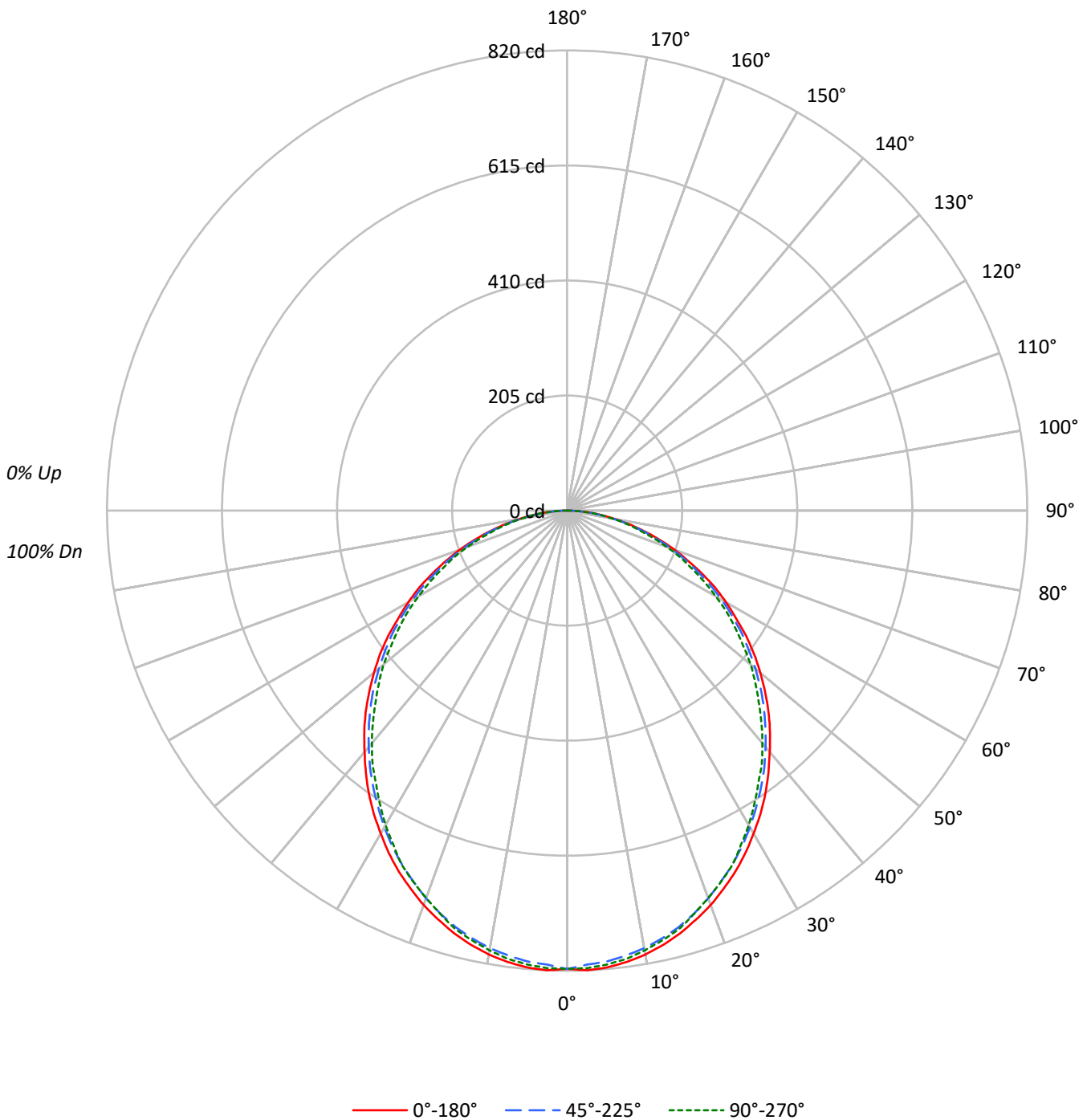
Lumens per Lamp: N/A
Luminaire Lumens: 2160.4 lumens
Efficiency: N/A
Efficacy: 125.6 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

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	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	109	104	100	96	106	102	98	94	97	94	91	94	91	89	90	88	86	84				84
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74	79	75	72	70				70
3	90	80	72	65	88	78	71	65	75	69	64	73	67	62	70	65	61	59				59
4	83	71	62	55	80	70	61	55	67	60	54	65	59	54	63	57	53	51				51
5	76	63	54	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44				44
6	70	57	48	42	69	56	48	42	54	47	41	53	46	41	51	45	41	39				39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	34				34
8	61	47	39	33	59	47	39	33	45	38	33	44	37	33	43	37	32	30				30
9	57	44	35	30	56	43	35	30	42	35	30	41	34	29	40	34	29	27				27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25				25

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9899	9899	9899
5°	9945	9814	9879
10°	9886	9746	9795
15°	9783	9640	9683
20°	9649	9483	9474
25°	9490	9310	9319
30°	9301	9121	9056
35°	9115	8917	8787
40°	8885	8704	8565
45°	8701	8494	8274
50°	8469	8252	8048
55°	8223	8009	7741
60°	7932	7721	7411
65°	7589	7357	7047
70°	7205	6968	6680
75°	6683	6496	6149
80°	6017	5877	5689
85°	5619	5340	5146

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 8701 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	77.0	3.6
10°-20°	217.9	10.1
20°-30°	322.6	14.9
30°-40°	378.3	17.5
40°-50°	382.5	17.7
50°-60°	338.2	15.7
60°-70°	254.0	11.8
70°-80°	146.4	6.8
80°-90°	43.4	2.0
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°	617.5	28.6
0°-40°	995.8	46.1
0°-60°	1716.5	79.5
0°-90°	2160.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2160.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	817	817	817	817	817	
5°	817	814	807	813	812	78
15°	780	776	768	774	772	220
25°	710	704	696	700	697	327
35°	616	611	603	600	594	385
45°	508	504	496	489	483	391
55°	389	386	379	372	366	347
65°	265	263	256	250	246	262
75°	143	141	139	135	131	151
85°	40	40	38	38	37	45
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	816.7	816.7	816.7	816.7	816.7
2.5°	820.0	817.3	809.9	817.3	816.0
5°	817.3	814.0	806.6	813.3	811.9
7.5°	811.3	807.9	799.8	807.2	805.9
10°	803.2	799.8	791.8	797.8	795.8
12.5°	792.4	789.1	781.0	785.7	784.3
15°	779.6	775.6	768.2	773.6	771.6
17.5°	764.1	760.8	752.7	759.4	753.4
20°	748.0	744.6	735.2	741.3	734.5
22.5°	729.1	725.1	715.7	719.7	716.3
25°	709.6	704.2	696.1	699.5	696.8
27.5°	688.1	682.7	674.6	676.0	671.2
30°	664.5	659.8	651.7	653.1	647.0
32.5°	640.9	636.9	626.8	626.8	620.7
35°	616.0	610.6	602.6	600.5	593.8
37.5°	589.1	584.4	577.0	573.6	569.6
40°	561.5	558.8	550.1	546.0	541.3
42.5°	535.2	530.5	523.1	517.7	512.3
45°	507.6	503.6	495.5	488.8	482.7
47.5°	478.7	475.3	467.2	459.8	455.1
50°	449.1	446.4	437.6	429.5	426.8
52.5°	420.1	416.7	408.0	400.6	395.2
55°	389.1	386.5	379.0	371.6	366.3
57.5°	356.2	356.2	348.1	341.3	337.3
60°	327.2	323.8	318.5	311.0	305.7
62.5°	296.9	294.9	287.5	280.1	276.0
65°	264.6	262.6	256.5	249.8	245.7
67.5°	232.9	232.3	226.9	221.5	218.8
70°	203.3	202.0	196.6	191.2	188.5
72.5°	173.0	171.7	167.0	162.3	158.9
75°	142.7	141.4	138.7	134.7	131.3
77.5°	113.1	113.1	109.7	108.4	107.0
80°	86.2	85.5	84.2	82.8	81.5
82.5°	61.9	61.3	59.9	59.2	59.2
85°	40.4	39.7	38.4	37.7	37.0
87.5°	20.9	19.5	18.9	17.5	16.8
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	19.42	21.04	19.78	21.36	21.67	19.10	20.73	19.47	21.04	21.36
	3H	21.21	22.68	21.59	23.01	23.37	20.86	22.33	21.24	22.66	23.02
	4H	21.89	23.28	22.29	23.62	24.00	21.51	22.89	21.91	23.24	23.62
	6H	22.39	23.67	22.80	24.04	24.43	22.01	23.29	22.42	23.66	24.05
	8H	22.56	23.78	22.98	24.17	24.57	22.18	23.41	22.61	23.80	24.19
	12H	22.68	23.85	23.11	24.24	24.66	22.30	23.48	22.73	23.86	24.29
4H	2H	20.01	21.39	20.40	21.74	22.11	19.76	21.14	20.16	21.49	21.87
	3H	22.03	23.19	22.44	23.59	23.99	21.74	22.90	22.14	23.29	23.69
	4H	22.84	23.89	23.27	24.31	24.74	22.51	23.57	22.95	23.98	24.41
	6H	23.47	24.39	23.93	24.83	25.29	23.14	24.06	23.60	24.50	24.96
	8H	23.69	24.55	24.15	24.99	25.46	23.36	24.22	23.82	24.67	25.13
	12H	23.86	24.64	24.34	25.11	25.58	23.53	24.31	24.01	24.78	25.25
8H	4H	23.14	24.00	23.60	24.44	24.90	22.85	23.71	23.31	24.15	24.62
	6H	23.89	24.61	24.38	25.09	25.57	23.60	24.32	24.10	24.81	25.28
	8H	24.19	24.83	24.70	25.34	25.82	23.90	24.54	24.41	25.05	25.54
	12H	24.45	25.01	24.95	25.50	26.06	24.15	24.72	24.66	25.21	25.77
12H	4H	23.17	23.94	23.65	24.42	24.89	22.89	23.66	23.37	24.14	24.61
	6H	23.95	24.59	24.45	25.10	25.58	23.67	24.31	24.18	24.82	25.31
	8H	24.30	24.87	24.81	25.36	25.92	24.03	24.60	24.53	25.09	25.65