

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: P242447

Luminaire Tested: S123DRP-S560D935-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242447
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-S560D935-X4F0-XX-UDD-F-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

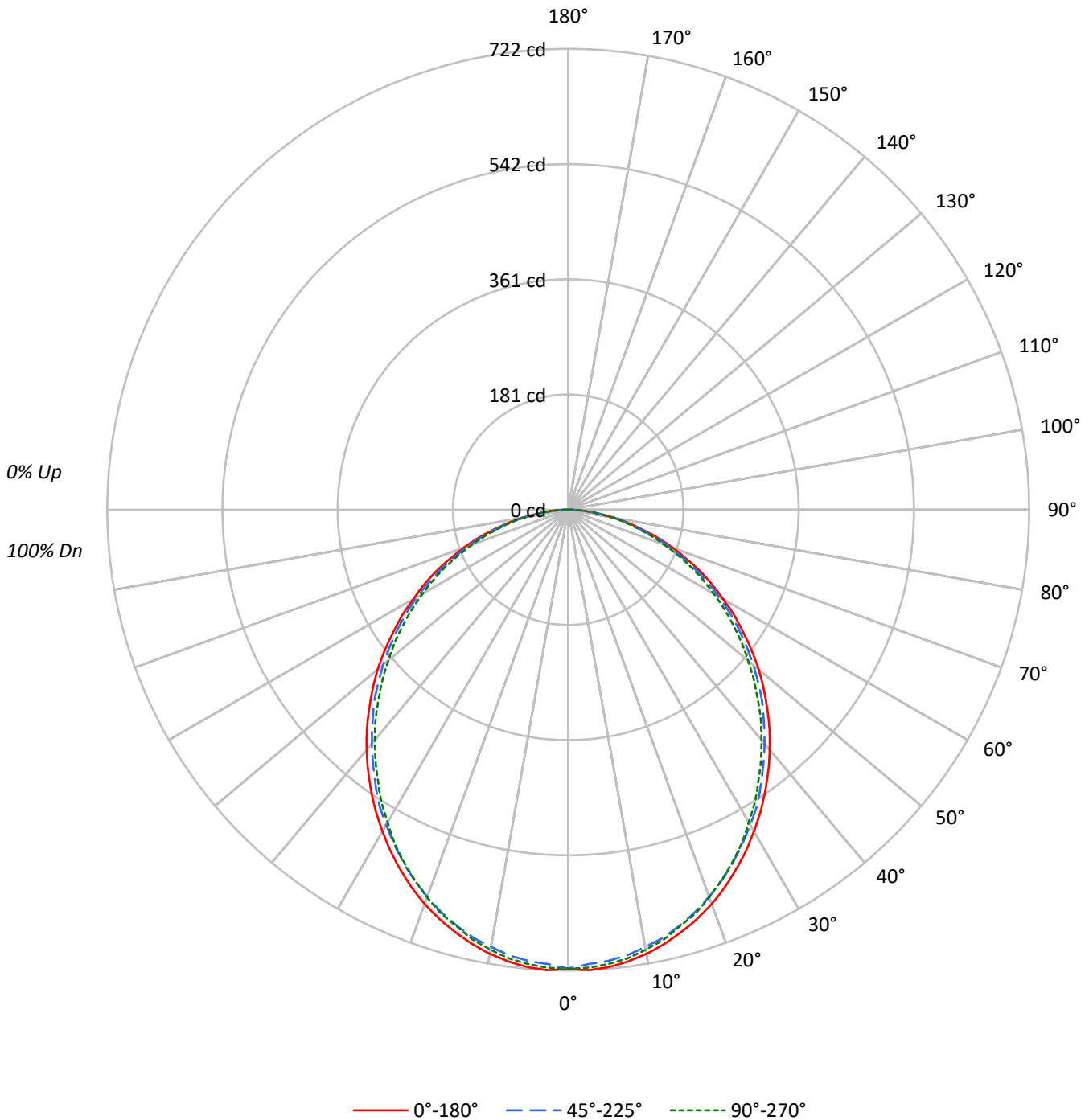
Lumens per Lamp: N/A
Luminaire Lumens: 1871.2 lumens
Efficiency: N/A
Efficacy: 99.5 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.3
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8715	8715	8715
5°	8756	8635	8696
10°	8697	8560	8613
15°	8596	8464	8479
20°	8477	8325	8333
25°	8317	8161	8144
30°	8142	7978	7918
35°	7959	7785	7684
40°	7768	7571	7454
45°	7556	7376	7196
50°	7345	7136	6936
55°	7069	6885	6676
60°	6790	6594	6385
65°	6542	6275	6080
70°	6177	5915	5653
75°	5648	5442	5212
80°	5089	4879	4830
85°	4464	4297	4131

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 7556 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	67.8	3.6
10°-20°	191.4	10.2
20°-30°	282.7	15.1
30°-40°	330.1	17.6
40°-50°	331.9	17.7
50°-60°	291.5	15.6
60°-70°	217.1	11.6
70°-80°	123.6	6.6
80°-90°	35.1	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°	541.8	29.0
0°-40°	872.0	46.6
0°-60°	1495.4	79.9
0°-90°	1871.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1871.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	719	719	719	719	719	
5°	720	716	710	716	715	68
15°	685	682	674	679	676	193
25°	622	618	610	611	609	286
35°	538	534	526	522	519	337
45°	441	438	430	423	420	340
55°	334	334	326	319	316	300
65°	228	225	219	214	212	225
75°	121	118	116	113	111	129
85°	32	31	31	30	30	37
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	719.0	719.0	719.0	719.0	719.0
2.5°	722.1	719.6	712.8	719.0	718.4
5°	719.6	716.5	709.7	715.9	714.7
7.5°	714.0	711.0	704.2	709.7	709.1
10°	706.6	703.5	695.5	701.1	699.8
12.5°	696.7	694.3	686.8	690.6	689.9
15°	685.0	682.5	674.5	679.4	675.7
17.5°	672.0	668.9	660.9	664.6	663.3
20°	657.2	653.5	645.4	647.9	646.0
22.5°	640.5	636.8	628.7	630.6	628.1
25°	621.9	618.2	610.2	610.8	608.9
27.5°	602.8	599.1	590.4	591.0	589.2
30°	581.7	578.7	570.0	570.0	565.7
32.5°	560.7	556.4	550.2	545.9	544.0
35°	537.9	534.1	526.1	522.4	519.3
37.5°	515.0	510.0	502.0	497.7	495.8
40°	490.9	487.2	478.5	473.6	471.1
42.5°	466.8	462.4	453.8	448.8	446.4
45°	440.8	438.3	430.3	422.9	419.8
47.5°	415.4	411.7	404.3	396.9	394.4
50°	389.5	386.4	378.4	371.6	367.8
52.5°	362.3	360.4	351.8	346.2	342.5
55°	334.5	333.8	325.8	319.0	315.9
57.5°	308.5	306.0	299.8	293.7	289.9
60°	280.1	279.4	272.0	266.5	263.4
62.5°	254.7	252.9	245.4	239.9	238.0
65°	228.1	225.0	218.8	213.9	212.0
67.5°	199.7	197.2	192.3	187.9	185.5
70°	174.3	170.6	166.9	162.6	159.5
72.5°	147.8	145.3	141.0	137.2	136.0
75°	120.6	118.1	116.2	113.1	111.3
77.5°	96.4	95.2	92.7	90.3	90.3
80°	72.9	71.1	69.9	69.2	69.2
82.5°	50.1	50.1	50.1	48.8	48.2
85°	32.1	30.9	30.9	29.7	29.7
87.5°	16.1	14.2	13.6	13.0	13.0
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	18.88	20.50	19.24	20.81	21.13	18.57	20.18	18.93	20.50	20.81
	3H	20.65	22.11	21.03	22.44	22.80	20.28	21.74	20.66	22.07	22.43
	4H	21.31	22.69	21.71	23.03	23.41	20.92	22.30	21.32	22.64	23.02
	6H	21.80	23.07	22.21	23.44	23.83	21.41	22.68	21.82	23.05	23.44
	8H	21.95	23.17	22.37	23.56	23.96	21.56	22.78	21.99	23.17	23.57
	12H	22.05	23.22	22.48	23.60	24.03	21.67	22.84	22.10	23.22	23.65
4H	2H	19.46	20.84	19.86	21.18	21.56	19.21	20.59	19.61	20.93	21.31
	3H	21.45	22.61	21.86	23.00	23.40	21.15	22.30	21.56	22.70	23.10
	4H	22.24	23.28	22.67	23.69	24.13	21.91	22.95	22.34	23.36	23.80
	6H	22.85	23.77	23.31	24.21	24.66	22.52	23.43	22.97	23.87	24.33
	8H	23.06	23.91	23.52	24.35	24.82	22.73	23.58	23.19	24.02	24.49
	12H	23.21	23.97	23.69	24.45	24.92	22.88	23.64	23.36	24.12	24.59
8H	4H	22.52	23.37	22.98	23.82	24.28	22.23	23.08	22.69	23.53	23.99
	6H	23.26	23.97	23.75	24.46	24.93	22.96	23.67	23.46	24.16	24.64
	8H	23.53	24.17	24.04	24.68	25.16	23.25	23.88	23.75	24.39	24.87
	12H	23.76	24.32	24.27	24.81	25.37	23.47	24.03	23.98	24.52	25.08
12H	4H	22.55	23.32	23.03	23.79	24.26	22.27	23.03	22.75	23.51	23.98
	6H	23.31	23.95	23.82	24.45	24.94	23.03	23.66	23.53	24.17	24.66
	8H	23.64	24.20	24.15	24.70	25.26	23.37	23.93	23.87	24.42	24.98