

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: P242516

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242516
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-15)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DRP-S560D935-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

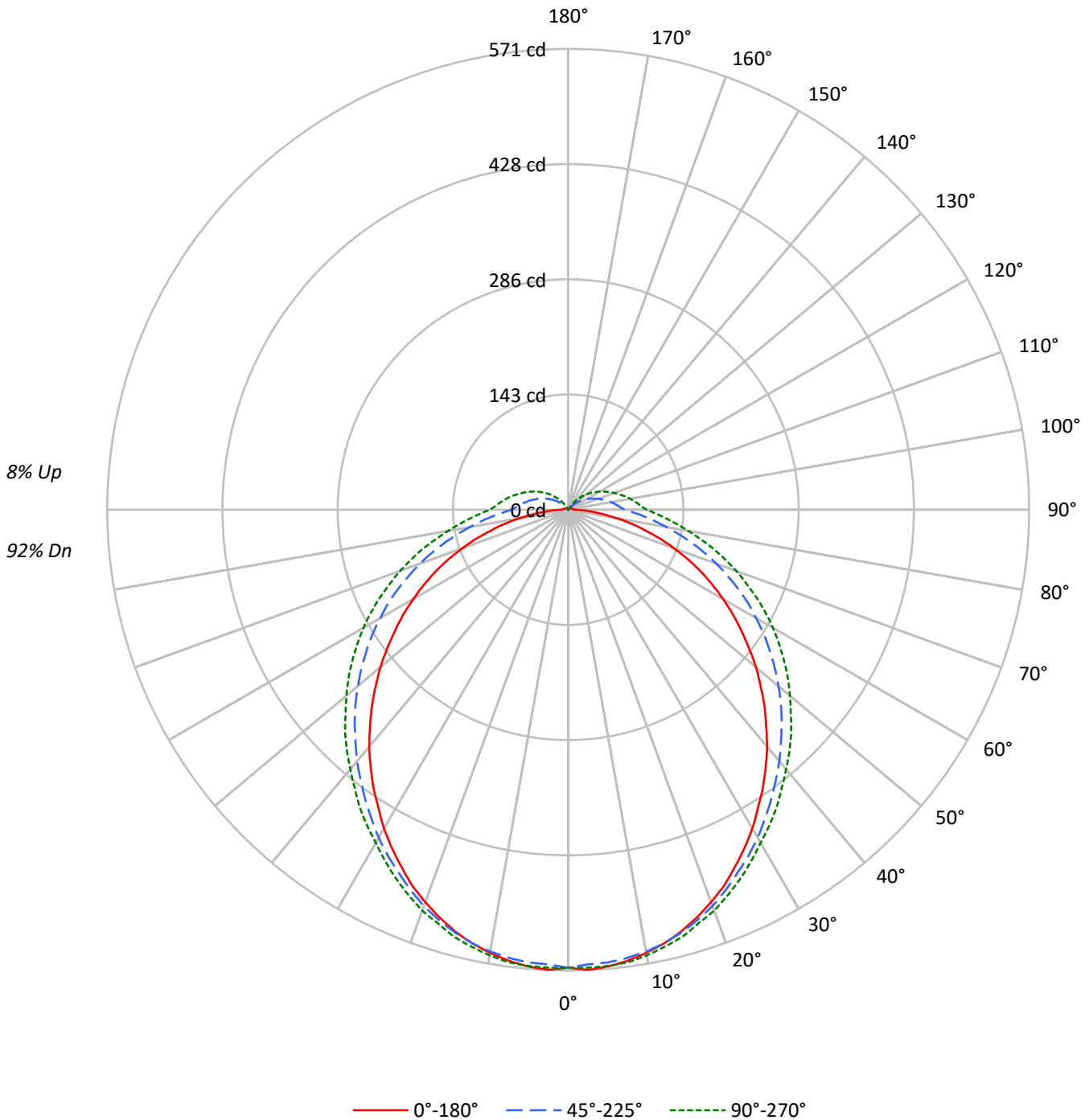
Lumens per Lamp: N/A
Luminaire Lumens: 1907.3 lumens
Efficiency: N/A
Efficacy: 101.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

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	117	117	117	117	113	113	113	113	106	106	106	100	100	100	94	94	94	92
1	105	100	95	90	102	97	92	88	91	87	84	85	82	80	80	78	76	73
2	95	86	79	72	92	83	77	71	79	73	68	74	69	65	70	66	63	60
3	86	75	67	60	83	73	65	59	69	62	56	65	59	54	61	56	52	50
4	79	66	57	50	76	64	56	49	61	54	48	57	51	46	54	49	45	42
5	72	59	50	43	70	58	49	42	54	47	41	52	45	40	49	43	39	36
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	44	38	34	32
7	62	48	39	33	60	47	38	32	45	37	32	42	36	31	40	35	30	28
8	58	44	35	29	56	43	35	29	41	33	28	39	32	28	37	31	27	25
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	28	24	22
10	50	37	29	24	49	36	29	24	35	28	23	33	27	23	32	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6879	6879	6879
5°	6899	6693	6692
10°	6837	6527	6485
15°	6749	6341	6263
20°	6623	6131	6022
25°	6467	5891	5769
30°	6307	5675	5513
35°	6128	5447	5309
40°	5958	5240	5090
45°	5768	5039	4911
50°	5580	4841	4718
55°	5374	4638	4540
60°	5172	4429	4358
65°	4965	4210	4145
70°	4655	3961	3923
75°	4262	3677	3698
80°	3808	3391	3438
85°	3383	3179	3269

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5768 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	53.8	2.8
10°-20°	153.5	8.0
20°-30°	229.5	12.0
30°-40°	274.0	14.4
40°-50°	286.7	15.0
50°-60°	269.0	14.1
60°-70°	224.7	11.8
70°-80°	160.7	8.4
80°-90°	95.6	5.0
90°-100°	60.1	3.1
100°-110°	44.2	2.3
110°-120°	29.5	1.5
120°-130°	16.8	0.9
130°-140°	7.5	0.4
140°-150°	1.6	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	436.8	22.9
0°-40°	710.8	37.3
0°-60°	1266.6	66.4
0°-90°	1747.6	91.6
90°-120°	133.7	7.0
90°-150°	159.7	8.4
90°-180°	160.0	8.4
0°-180°	1907.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	568	568	568	568	568	
5°	568	567	563	568	568	54
15°	541	543	542	548	548	152
25°	488	495	496	504	504	225
35°	420	430	438	448	450	263
45°	344	359	374	386	391	265
55°	262	282	305	322	326	235
65°	181	205	232	251	257	179
75°	98	127	158	179	186	105
85°	30	61	94	115	121	31
90°	8	38	70	91	97	6
95°	7	31	61	80	87	5
105°	5	20	46	64	69	5
115°	3	10	33	48	52	3
125°	2	2	20	33	37	2
135°	1	1	7	18	22	1
145°	1	0	0	5	7	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	567.5	567.5	567.5	567.5	567.5
2.5°	570.6	568.8	563.8	568.8	568.1
5°	568.1	566.9	563.2	568.1	567.5
7.5°	563.8	563.8	560.1	566.3	565.7
10°	557.6	558.9	555.8	562.0	560.7
12.5°	550.2	552.1	550.2	555.8	554.5
15°	540.9	542.8	542.2	548.4	547.7
17.5°	529.8	533.5	532.9	538.5	537.2
20°	517.5	521.2	522.4	528.0	528.6
22.5°	504.5	508.2	510.0	517.5	516.8
25°	488.4	494.6	496.4	504.5	504.5
27.5°	472.9	479.7	483.4	490.2	490.9
30°	456.2	464.3	469.2	476.6	476.6
32.5°	437.7	447.0	453.8	461.8	463.7
35°	420.4	430.3	438.3	447.6	450.1
37.5°	401.8	413.0	422.2	432.8	434.6
40°	383.3	394.4	406.8	417.3	419.8
42.5°	362.9	377.1	390.1	401.8	405.6
45°	343.7	358.6	374.0	385.8	390.7
47.5°	323.3	340.0	357.3	370.3	374.0
50°	303.5	320.9	340.0	354.2	358.6
52.5°	282.5	301.1	322.7	337.5	343.1
55°	262.1	282.5	304.8	321.5	326.4
57.5°	242.3	263.4	287.5	304.2	309.7
60°	221.3	243.6	268.9	286.2	293.0
62.5°	201.5	224.4	251.6	268.9	275.1
65°	181.1	205.2	232.5	251.0	257.2
67.5°	160.7	186.1	213.3	233.7	238.6
70°	139.1	165.7	195.4	215.1	221.3
72.5°	119.3	145.9	176.8	197.2	203.4
75°	98.3	127.4	158.3	178.7	186.1
77.5°	80.4	109.4	140.3	162.0	167.5
80°	61.2	91.5	123.6	144.7	150.8
82.5°	44.5	75.4	108.2	129.2	135.4
85°	30.3	61.2	94.0	115.0	121.2
87.5°	18.5	49.5	81.0	102.0	108.2
90°	8.0	38.3	69.9	90.9	97.1
92.5°	7.4	34.0	64.9	85.3	90.9
95°	6.8	30.9	61.2	80.4	86.6
97.5°	6.2	28.4	57.5	76.0	82.2
100°	5.6	25.3	53.8	71.7	77.9
102.5°	4.9	22.3	50.1	67.4	73.6
105°	4.9	19.8	46.4	63.7	69.2
107.5°	4.3	17.3	42.7	59.3	64.9
110°	3.7	14.8	39.6	55.6	60.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.7	12.4	35.9	51.3	56.9
115°	3.1	10.5	32.8	47.6	52.5
117.5°	3.1	8.0	29.1	43.9	48.8
120°	2.5	5.6	26.0	40.2	44.5
122.5°	2.5	3.7	22.9	36.5	40.8
125°	1.9	1.9	19.8	32.8	37.1
127.5°	1.9	1.2	16.7	29.1	33.4
130°	1.9	1.2	13.6	25.3	29.1
132.5°	1.2	1.2	10.5	21.6	26.0
135°	1.2	0.6	7.4	18.5	21.6
137.5°	1.2	0.6	4.9	14.8	17.9
140°	0.6	0.6	2.5	11.7	14.8
142.5°	0.6	0.0	0.0	8.0	11.1
145°	0.6	0.0	0.0	4.9	7.4
147.5°	0.0	0.0	0.0	1.9	4.3
150°	0.0	0.0	0.0	0.0	1.2
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	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	15.75	17.26	16.24	17.74	18.25	17.75	19.25	18.24	19.74	20.25
	3H	17.31	18.68	17.81	19.17	19.73	20.13	21.50	20.63	21.99	22.55
	4H	17.83	19.13	18.35	19.64	20.21	21.24	22.54	21.76	23.05	23.62
	6H	18.18	19.39	18.71	19.91	20.49	22.35	23.56	22.88	24.08	24.66
	8H	18.26	19.42	18.81	19.97	20.56	22.90	24.06	23.45	24.61	25.20
	12H	18.31	19.42	18.87	19.96	20.58	23.51	24.62	24.06	25.16	25.78
4H	2H	16.66	17.96	17.18	18.47	19.04	18.21	19.51	18.73	20.02	20.59
	3H	18.46	19.57	19.00	20.12	20.71	20.80	21.91	21.34	22.46	23.05
	4H	19.13	20.14	19.68	20.70	21.32	22.07	23.08	22.63	23.64	24.27
	6H	19.60	20.49	20.18	21.08	21.72	23.35	24.25	23.93	24.83	25.47
	8H	19.74	20.58	20.32	21.16	21.81	24.00	24.84	24.58	25.43	26.08
	12H	19.82	20.58	20.42	21.20	21.85	24.72	25.48	25.32	26.10	26.75
8H	4H	19.76	20.60	20.34	21.19	21.84	22.29	23.14	22.88	23.72	24.37
	6H	20.42	21.13	21.03	21.75	22.41	23.74	24.45	24.35	25.07	25.73
	8H	20.65	21.29	21.27	21.93	22.59	24.51	25.15	25.14	25.79	26.46
	12H	20.82	21.39	21.45	22.02	22.75	25.39	25.97	26.02	26.59	27.33
12H	4H	19.91	20.68	20.52	21.29	21.95	22.31	23.07	22.91	23.68	24.34
	6H	20.66	21.30	21.28	21.94	22.60	23.78	24.42	24.40	25.06	25.72
	8H	20.98	21.55	21.61	22.18	22.91	24.62	25.19	25.25	25.82	26.55