

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: P243371

Luminaire Tested: S123DRP-H560D930-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243371
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-54)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DRP-H560D930-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

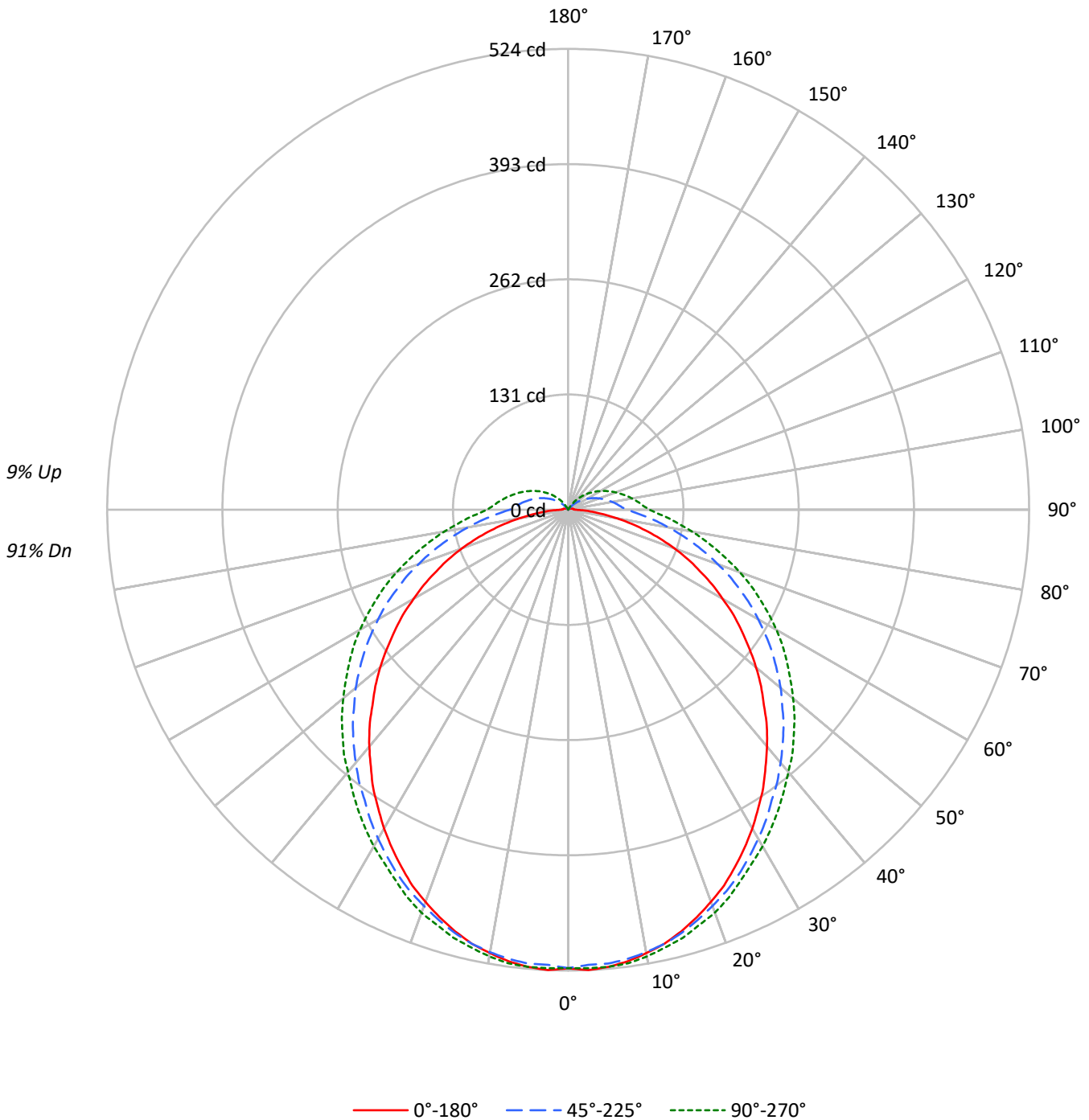
Lumens per Lamp: N/A
Luminaire Lumens: 1769.2 lumens
Efficiency: N/A
Efficacy: 102.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 17.2
Input Voltage (V): 120
Input Current (Ain): 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	91
1	105	100	95	90	101	96	92	88	91	87	84	85	82	80	80	78	76	73
2	95	86	79	72	91	83	77	71	78	73	68	74	69	65	69	66	62	60
3	86	75	66	60	83	73	65	58	69	62	56	65	59	54	61	56	52	50
4	79	66	57	50	76	64	56	49	61	53	48	57	51	46	54	49	45	42
5	72	59	50	43	70	57	49	42	54	47	41	51	45	40	49	43	39	36
6	67	53	44	37	64	52	43	37	49	41	36	46	40	35	44	38	34	31
7	62	48	39	33	60	47	38	32	44	37	32	42	36	31	40	34	30	28
8	57	44	35	29	55	43	34	29	41	33	28	39	32	27	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	23	35	28	23	33	27	22	32	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6319	6319	6319
5°	6337	6156	6153
10°	6278	6000	5966
15°	6192	5829	5762
20°	6073	5626	5554
25°	5937	5438	5314
30°	5786	5226	5112
35°	5634	5012	4911
40°	5466	4838	4719
45°	5281	4664	4557
50°	5126	4489	4390
55°	4937	4309	4226
60°	4737	4110	4067
65°	4529	3897	3871
70°	4293	3669	3680
75°	3936	3421	3455
80°	3484	3177	3260
85°	3092	2979	3107

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5281 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.5	2.8
10°-20°	141.1	8.0
20°-30°	211.3	11.9
30°-40°	252.8	14.3
40°-50°	265.1	15.0
50°-60°	249.3	14.1
60°-70°	208.6	11.8
70°-80°	149.7	8.5
80°-90°	89.7	5.1
90°-100°	56.8	3.2
100°-110°	41.9	2.4
110°-120°	28.0	1.6
120°-130°	16.2	0.9
130°-140°	7.5	0.4
140°-150°	1.7	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	401.9	22.7
0°-40°	654.7	37.0
0°-60°	1169.1	66.1
0°-90°	1617.1	91.4
90°-120°	126.8	7.2
90°-150°	152.1	8.6
90°-180°	152.0	8.6
0°-180°	1769.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	521	521	521	521	521	
5°	522	521	518	522	522	49
15°	496	500	498	505	504	140
25°	448	454	458	465	465	207
35°	386	396	403	414	416	241
45°	315	330	346	358	362	243
55°	241	261	283	298	304	216
65°	165	190	215	234	240	164
75°	91	118	147	167	174	96
85°	28	56	88	108	115	28
90°	8	36	66	86	92	5
95°	6	29	58	76	82	5
105°	4	19	44	60	65	5
115°	3	10	31	45	50	3
125°	2	2	19	31	35	2
135°	1	0	8	18	21	1
145°	0	0	0	5	8	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°	521.3	521.3	521.3	521.3	521.3
2.5°	524.0	522.3	518.0	522.9	521.8
5°	521.8	521.3	518.0	522.3	521.8
7.5°	518.0	518.0	515.3	520.2	520.2
10°	512.0	513.6	510.9	516.4	515.8
12.5°	505.5	507.7	505.5	511.5	509.8
15°	496.3	499.5	498.4	505.0	503.9
17.5°	485.9	489.7	489.2	495.7	495.2
20°	474.5	479.4	479.4	485.9	487.6
22.5°	462.6	468.0	469.6	476.1	477.2
25°	448.4	454.4	458.2	465.3	464.7
27.5°	433.7	440.8	445.2	452.8	452.8
30°	418.5	426.7	432.1	440.3	441.9
32.5°	402.2	412.0	418.5	427.2	429.4
35°	386.5	395.7	403.3	413.6	416.4
37.5°	368.5	379.9	390.3	401.1	402.8
40°	351.7	364.2	375.6	387.0	389.2
42.5°	334.3	347.3	360.9	372.3	377.2
45°	314.7	330.5	346.2	358.2	362.5
47.5°	297.3	313.1	329.9	344.1	349.0
50°	278.8	295.1	315.3	328.8	333.7
52.5°	259.8	277.8	298.9	313.6	318.5
55°	240.8	260.9	283.2	298.4	303.8
57.5°	222.9	243.0	266.3	283.2	289.2
60°	202.7	225.0	249.5	266.9	273.4
62.5°	184.8	207.6	233.2	250.6	257.1
65°	165.2	189.7	215.2	234.3	240.2
67.5°	147.3	171.2	198.9	218.0	224.5
70°	128.3	153.3	181.0	200.6	207.6
72.5°	109.3	135.9	164.2	184.3	190.2
75°	90.8	118.5	147.3	167.4	173.9
77.5°	73.4	101.1	131.0	151.1	158.2
80°	56.0	84.8	115.8	135.9	143.0
82.5°	40.8	70.1	101.6	121.2	127.7
85°	27.7	56.5	88.1	108.2	115.2
87.5°	16.3	45.7	76.1	96.2	102.2
90°	7.6	35.9	66.3	86.4	92.4
92.5°	7.1	32.1	61.4	80.4	86.4
95°	6.0	29.4	57.6	76.1	82.1
97.5°	6.0	26.6	54.4	72.3	77.7
100°	5.4	23.9	51.1	67.9	73.4
102.5°	4.9	21.2	47.3	64.1	69.6
105°	4.3	19.0	44.0	60.3	65.2
107.5°	3.8	16.3	40.8	56.5	61.4
110°	3.8	14.1	37.5	52.7	57.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.3	12.0	34.2	48.9	53.8
115°	2.7	9.8	31.0	45.1	50.0
117.5°	2.7	7.6	27.7	41.9	46.2
120°	2.7	6.0	25.0	38.0	42.4
122.5°	2.2	3.8	22.3	34.8	39.1
125°	2.2	2.2	19.0	31.0	35.3
127.5°	1.6	1.1	16.3	27.7	31.5
130°	1.6	1.1	13.6	24.5	28.3
132.5°	1.1	1.1	10.9	21.2	25.0
135°	1.1	0.5	8.2	17.9	21.2
137.5°	1.1	0.5	5.4	14.7	17.9
140°	0.5	0.5	2.7	11.4	14.7
142.5°	0.5	0.0	0.5	8.7	11.4
145°	0.5	0.0	0.0	5.4	7.6
147.5°	0.5	0.0	0.0	2.7	4.9
150°	0.5	0.0	0.0	0.0	1.6
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	15.44	16.94	15.93	17.43	17.95	17.51	19.01	18.00	19.50	20.02
	3H	16.99	18.36	17.50	18.86	19.42	19.90	21.27	20.41	21.77	22.33
	4H	17.52	18.82	18.04	19.33	19.90	21.02	22.32	21.54	22.83	23.40
	6H	17.86	19.07	18.40	19.59	20.18	22.15	23.35	22.68	23.88	24.47
	8H	17.95	19.10	18.50	19.65	20.25	22.71	23.87	23.26	24.41	25.01
	12H	17.99	19.10	18.55	19.64	20.27	23.33	24.44	23.88	24.98	25.60
4H	2H	16.36	17.65	16.88	18.16	18.74	17.96	19.26	18.49	19.77	20.34
	3H	18.16	19.26	18.70	19.82	20.41	20.57	21.68	21.11	22.23	22.83
	4H	18.83	19.84	19.38	20.40	21.03	21.84	22.86	22.40	23.42	24.05
	6H	19.30	20.19	19.88	20.78	21.42	23.15	24.04	23.72	24.63	25.27
	8H	19.43	20.27	20.02	20.86	21.52	23.81	24.64	24.39	25.23	25.89
	12H	19.52	20.28	20.12	20.90	21.56	24.53	25.30	25.14	25.91	26.57
8H	4H	19.47	20.31	20.06	20.90	21.55	22.07	22.91	22.65	23.50	24.15
	6H	20.13	20.84	20.74	21.47	22.13	23.53	24.24	24.14	24.87	25.53
	8H	20.36	21.00	20.99	21.64	22.31	24.31	24.95	24.94	25.59	26.27
	12H	20.53	21.10	21.16	21.73	22.47	25.21	25.78	25.84	26.41	27.15
12H	4H	19.63	20.39	20.24	21.01	21.67	22.08	22.84	22.68	23.46	24.12
	6H	20.38	21.02	21.00	21.66	22.33	23.57	24.21	24.20	24.85	25.52
	8H	20.70	21.27	21.33	21.90	22.64	24.42	24.99	25.05	25.62	26.36