

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: P242338

Luminaire Tested: S122DRP-S290D930-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242338
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-14)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S122DRP-S290D930-X4F0-XX-UDD-D-W
Description: DEFINE 2 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

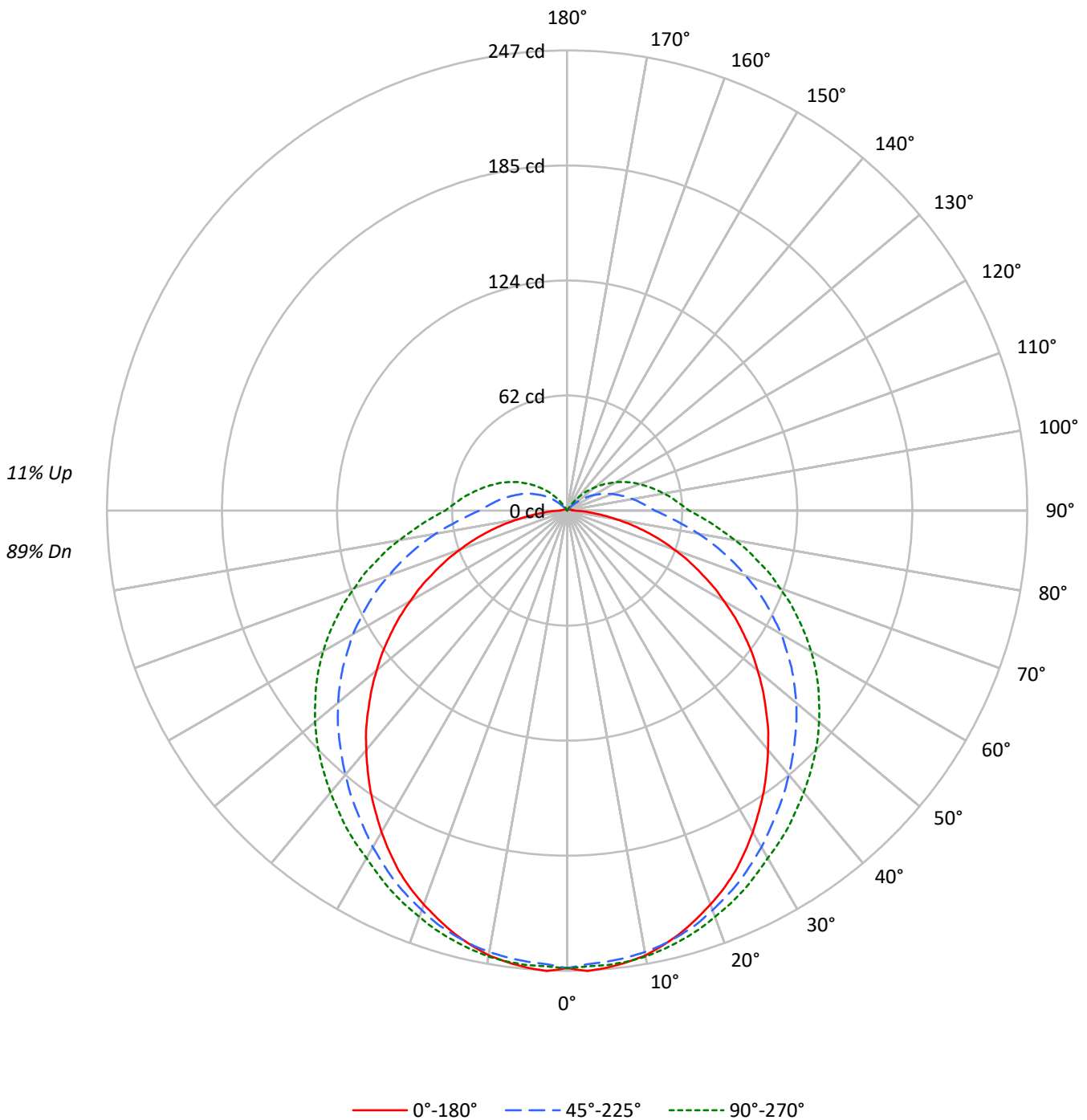
Lumens per Lamp: N/A
Luminaire Lumens: 937.2 lumens
Efficiency: N/A
Efficacy: 80.8 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42
Luminous Opening: Rectangular w/ Sides (W: 0.15' x L: 3.88' x H: 0.08')
CIE Type: Semi-Direct

Input Watts (W): 11.6
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	116	116	116	116	112	112	112	112	105	105	105	98	98	98	92	92	92	89
1	104	98	93	88	100	95	90	86	88	85	81	82	79	77	77	75	72	69
2	94	84	77	70	90	81	74	68	76	70	65	71	66	62	66	62	59	56
3	85	73	64	57	81	71	63	56	66	59	54	62	56	51	58	53	49	46
4	77	64	55	48	74	62	54	47	58	51	45	55	48	43	51	46	42	39
5	71	57	48	41	68	56	47	40	52	44	39	49	42	37	46	40	36	33
6	65	51	42	35	63	50	41	35	47	39	34	44	37	32	42	36	31	29
7	60	46	37	31	58	45	37	31	43	35	30	40	34	29	38	32	28	25
8	56	42	34	28	54	41	33	27	39	32	26	37	30	25	35	29	25	23
9	52	39	30	25	50	38	30	24	36	29	24	34	27	23	32	26	22	20
10	49	36	28	22	47	35	27	22	33	26	21	31	25	21	30	24	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4678	4678	4678
5°	4701	4484	4460
10°	4671	4333	4272
15°	4606	4179	4079
20°	4525	4013	3895
25°	4445	3855	3727
30°	4330	3694	3562
35°	4215	3539	3441
40°	4096	3405	3321
45°	3979	3284	3216
50°	3857	3171	3113
55°	3728	3053	3008
60°	3570	2931	2897
65°	3404	2789	2769
70°	3218	2635	2631
75°	2984	2482	2500
80°	2610	2325	2367
85°	2245	2177	2252

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3979 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	23.3	2.5
10°-20°	66.8	7.1
20°-30°	101.2	10.8
30°-40°	123.2	13.1
40°-50°	132.6	14.1
50°-60°	128.7	13.7
60°-70°	112.4	12.0
70°-80°	86.5	9.2
80°-90°	58.0	6.2
90°-100°	40.0	4.3
100°-110°	29.2	3.1
110°-120°	19.3	2.1
120°-130°	10.7	1.1
130°-140°	4.5	0.5
140°-150°	0.8	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	191.3	20.4
0°-40°	314.5	33.6
0°-60°	575.8	61.4
0°-90°	832.7	88.9
90°-120°	88.5	9.4
90°-150°	104.5	11.1
90°-180°	104.0	11.1
0°-180°	937.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	246	246	246	246	246	
5°	246	245	243	245	245	23
15°	235	236	236	239	238	66
25°	214	216	219	224	225	98
35°	184	190	197	205	207	115
45°	151	160	173	184	188	117
55°	116	128	147	160	164	103
65°	79	96	118	132	137	79
75°	44	64	86	102	106	46
85°	13	35	58	73	78	14
90°	4	24	47	61	66	2
95°	3	20	41	54	59	2
105°	2	12	31	43	47	2
115°	1	5	21	32	36	1
125°	1	1	12	22	25	1
135°	0	0	4	11	14	0
145°	0	0	0	2	4	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°	245.6	245.6	245.6	245.6	245.6
2.5°	247.4	246.3	243.8	245.6	244.9
5°	246.3	245.3	243.1	245.3	244.9
7.5°	244.6	243.8	242.1	244.6	244.2
10°	242.4	241.7	240.6	243.5	243.1
12.5°	238.9	239.2	238.5	241.4	241.0
15°	234.9	235.7	235.7	238.9	238.5
17.5°	230.0	231.4	232.5	235.7	235.7
20°	225.0	226.8	228.2	232.1	232.1
22.5°	219.6	221.8	223.9	227.8	228.5
25°	213.6	216.1	219.3	223.6	224.6
27.5°	206.5	210.4	213.9	219.3	220.0
30°	199.3	204.0	208.6	214.3	215.4
32.5°	191.5	196.9	202.6	209.3	211.5
35°	184.0	190.1	196.9	204.7	207.2
37.5°	175.9	182.6	191.2	199.7	202.2
40°	167.7	175.5	185.1	194.4	197.6
42.5°	159.8	167.7	179.1	189.4	192.6
45°	150.9	160.5	173.0	184.0	187.6
47.5°	142.4	152.7	167.0	178.3	182.3
50°	133.5	144.5	160.5	172.6	176.6
52.5°	124.9	136.7	153.8	166.2	170.5
55°	115.7	128.5	147.0	159.8	164.5
57.5°	106.8	121.0	139.5	153.4	158.1
60°	97.2	112.5	132.8	146.3	151.3
62.5°	88.6	104.7	124.9	139.5	144.2
65°	79.0	96.5	117.5	132.1	136.7
67.5°	70.5	88.6	110.0	124.6	129.6
70°	61.2	79.7	101.8	117.1	121.4
72.5°	52.7	71.9	94.3	109.3	114.6
75°	43.8	63.7	86.5	101.8	106.4
77.5°	35.2	55.9	79.0	94.3	99.3
80°	26.7	48.4	71.6	86.5	91.5
82.5°	19.6	40.9	64.4	79.4	84.0
85°	12.8	34.9	57.7	72.6	77.6
87.5°	7.8	29.2	52.0	66.6	71.2
90°	3.6	24.2	47.0	61.2	65.5
92.5°	3.2	22.1	43.8	57.7	61.9
95°	2.8	19.6	40.9	54.5	58.7
97.5°	2.5	17.8	38.4	51.6	55.9
100°	2.5	15.7	35.6	48.8	52.7
102.5°	2.1	13.9	33.1	45.9	49.8
105°	1.8	12.1	30.6	43.1	47.0
107.5°	1.8	10.3	28.1	40.2	44.1
110°	1.4	8.5	26.0	37.4	41.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.4	7.1	23.5	34.9	38.8
115°	1.4	5.3	21.4	32.0	36.0
117.5°	1.1	3.9	18.9	29.5	33.1
120°	1.1	2.5	16.7	26.7	30.6
122.5°	1.1	1.4	14.6	24.2	27.4
125°	0.7	0.7	12.1	21.7	24.9
127.5°	0.7	0.4	10.0	18.9	22.1
130°	0.7	0.4	7.8	16.4	19.2
132.5°	0.7	0.4	5.7	13.9	16.7
135°	0.4	0.4	3.9	11.4	14.2
137.5°	0.4	0.4	2.1	8.9	11.4
140°	0.4	0.0	0.7	6.4	8.5
142.5°	0.4	0.0	0.0	4.3	6.1
145°	0.0	0.0	0.0	2.1	3.9
147.5°	0.0	0.0	0.0	0.4	1.4
150°	0.0	0.0	0.0	0.0	0.0
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	13.58	15.06	14.11	15.59	16.17	16.64	18.12	17.17	18.65	19.23
	3H	15.08	16.43	15.62	16.97	17.59	19.27	20.62	19.81	21.16	21.78
	4H	15.58	16.87	16.14	17.42	18.05	20.55	21.84	21.11	22.39	23.02
	6H	15.89	17.09	16.47	17.66	18.30	21.88	23.08	22.45	23.65	24.29
	8H	15.97	17.12	16.55	17.71	18.36	22.56	23.71	23.15	24.30	24.95
	12H	16.01	17.11	16.60	17.69	18.37	23.32	24.42	23.91	25.00	25.68
4H	2H	14.69	15.98	15.25	16.53	17.16	17.03	18.32	17.59	18.87	19.50
	3H	16.45	17.55	17.02	18.14	18.79	19.87	20.97	20.45	21.57	22.22
	4H	17.09	18.10	17.68	18.71	19.39	21.31	22.33	21.91	22.93	23.61
	6H	17.54	18.44	18.15	19.06	19.76	22.82	23.72	23.43	24.34	25.04
	8H	17.67	18.51	18.28	19.14	19.84	23.60	24.44	24.22	25.07	25.78
	12H	17.74	18.51	18.38	19.16	19.87	24.47	25.24	25.11	25.89	26.60
8H	4H	17.93	18.78	18.55	19.40	20.11	21.51	22.35	22.12	22.98	23.68
	6H	18.59	19.31	19.24	19.98	20.69	23.17	23.89	23.82	24.55	25.27
	8H	18.83	19.47	19.48	20.15	20.87	24.08	24.72	24.73	25.40	26.12
	12H	18.99	19.57	19.65	20.23	21.02	25.11	25.69	25.77	26.35	27.14
12H	4H	18.16	18.93	18.80	19.58	20.30	21.51	22.28	22.15	22.93	23.65
	6H	18.94	19.59	19.60	20.26	20.98	23.20	23.85	23.86	24.53	25.25
	8H	19.28	19.85	19.94	20.52	21.30	24.17	24.75	24.83	25.41	26.20