

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: P243203

Luminaire Tested: S122DRP-H290D935-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243203  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-53)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S122DRP-H290D935-X4F0-XX-UDD-D-W  
Description: DEFINE 2 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: -

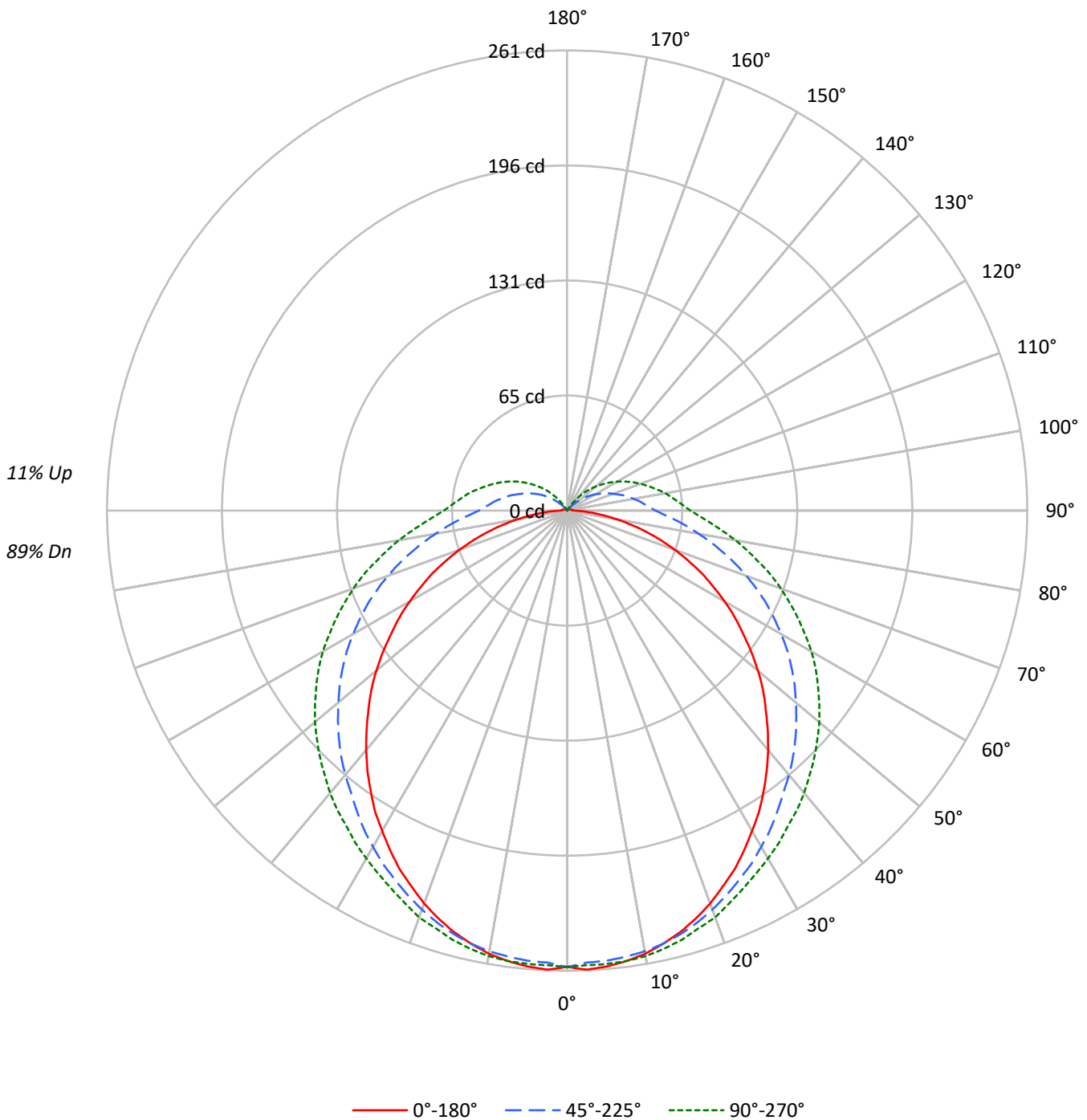
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 993.1 lumens  
Efficiency: N/A  
Efficacy: 88.7 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): 11.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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	84	81	82	79	76	77	74	72	69
2	93	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	41	39
5	71	57	48	41	68	55	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	41	36	31	29
7	60	46	37	31	58	45	37	30	42	35	29	40	33	28	38	32	28	25
8	56	42	33	27	54	41	33	27	39	31	26	37	30	25	35	29	25	22
9	52	39	30	25	50	38	30	24	36	28	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°	4930	4930	4930
5°	4952	4727	4700
10°	4917	4571	4509
15°	4855	4409	4308
20°	4771	4235	4120
25°	4674	4061	3923
30°	4558	3899	3767
35°	4451	3739	3627
40°	4330	3600	3514
45°	4201	3475	3398
50°	4083	3347	3291
55°	3924	3228	3176
60°	3787	3094	3063
65°	3632	2959	2927
70°	3413	2798	2796
75°	3168	2629	2643
80°	2816	2458	2509
85°	2474	2324	2374

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4201 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	24.5	2.5
10°-20°	70.4	7.1
20°-30°	106.7	10.7
30°-40°	130.2	13.1
40°-50°	140.1	14.1
50°-60°	136.2	13.7
60°-70°	119.1	12.0
70°-80°	91.7	9.2
80°-90°	61.6	6.2
90°-100°	42.6	4.3
100°-110°	31.4	3.2
110°-120°	20.9	2.1
120°-130°	11.8	1.2
130°-140°	5.1	0.5
140°-150°	0.9	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	201.7	20.3
0°-40°	331.9	33.4
0°-60°	608.1	61.2
0°-90°	880.4	88.7
90°-120°	94.8	9.6
90°-150°	112.7	11.3
90°-180°	113.0	11.4
0°-180°	993.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	259	259	259	259	259	
5°	260	258	256	258	258	25
15°	248	249	249	252	252	70
25°	225	228	231	236	236	103
35°	194	201	208	216	218	122
45°	159	169	183	194	198	123
55°	122	136	155	169	174	109
65°	84	102	125	140	144	83
75°	46	68	92	108	112	49
85°	14	37	62	77	82	14
90°	4	26	50	65	70	3
95°	3	21	44	58	62	2
105°	2	13	33	46	50	2
115°	1	6	23	35	39	1
125°	1	1	14	23	27	1
135°	0	0	5	13	16	0
145°	0	0	0	3	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°	258.8	258.8	258.8	258.8	258.8
2.5°	260.6	259.5	256.6	258.8	258.1
5°	259.5	258.4	256.3	258.4	258.1
7.5°	257.7	257.0	255.2	258.1	257.7
10°	255.2	254.8	253.8	256.6	256.6
12.5°	251.6	251.9	251.6	254.8	254.5
15°	247.6	248.7	248.7	251.9	251.9
17.5°	242.6	244.4	245.1	248.7	248.3
20°	237.2	239.3	240.8	244.7	245.5
22.5°	230.7	233.9	236.1	240.4	240.8
25°	224.6	228.2	231.0	236.1	236.4
27.5°	217.3	221.7	226.0	231.0	232.1
30°	209.8	215.2	220.2	226.4	227.8
32.5°	202.6	208.0	214.5	221.0	223.5
35°	194.3	200.8	208.0	215.9	218.4
37.5°	186.0	192.8	201.5	210.9	214.1
40°	177.3	185.3	195.7	205.8	209.1
42.5°	168.3	177.0	189.6	200.0	203.6
45°	159.3	169.0	183.1	194.3	198.2
47.5°	150.7	161.1	176.3	188.9	192.5
50°	141.3	152.8	169.4	182.4	186.7
52.5°	131.6	144.5	162.6	175.9	180.2
55°	121.8	136.2	155.4	169.4	173.7
57.5°	112.8	128.0	148.1	162.2	167.2
60°	103.1	119.3	140.2	155.0	160.0
62.5°	93.4	111.0	132.3	147.4	152.1
65°	84.3	102.4	124.7	139.9	144.5
67.5°	74.3	93.4	116.4	132.3	136.6
70°	64.9	85.1	108.1	124.0	129.0
72.5°	55.5	76.1	99.8	115.7	121.1
75°	46.5	67.8	91.6	107.8	112.5
77.5°	37.1	59.5	83.6	99.8	104.5
80°	28.8	51.2	75.7	91.9	97.0
82.5°	20.5	43.6	68.5	84.3	89.0
85°	14.1	37.1	61.6	77.1	81.8
87.5°	8.3	31.0	55.1	70.6	75.3
90°	4.0	26.0	50.1	65.2	69.9
92.5°	3.2	23.4	46.5	61.3	66.0
95°	2.9	20.9	43.6	58.0	62.4
97.5°	2.9	19.1	41.1	55.1	59.5
100°	2.5	16.9	38.2	51.9	56.6
102.5°	2.5	14.8	35.7	49.0	53.3
105°	2.2	13.0	33.2	46.1	50.1
107.5°	1.8	11.2	30.3	43.3	47.2
110°	1.8	9.4	27.8	40.4	44.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.4	7.9	25.6	37.5	41.5
115°	1.4	6.1	23.1	34.6	38.6
117.5°	1.4	4.3	20.5	31.7	35.7
120°	1.1	2.9	18.4	29.2	32.8
122.5°	1.1	1.8	15.9	26.3	29.9
125°	1.1	0.7	13.7	23.4	27.0
127.5°	0.7	0.7	11.2	20.9	24.1
130°	0.7	0.4	9.0	18.0	21.3
132.5°	0.7	0.4	6.8	15.5	18.4
135°	0.4	0.4	4.7	12.6	15.9
137.5°	0.4	0.4	2.5	10.1	12.6
140°	0.4	0.0	1.1	7.6	9.7
142.5°	0.4	0.0	0.0	5.0	7.2
145°	0.4	0.0	0.0	2.9	4.3
147.5°	0.0	0.0	0.0	0.7	2.2
150°	0.0	0.0	0.0	0.0	0.4
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	13.76	15.24	14.29	15.77	16.35	16.82	18.30	17.35	18.83	19.41
	3H	15.26	16.61	15.80	17.15	17.77	19.46	20.81	20.00	21.35	21.97
	4H	15.77	17.05	16.33	17.61	18.24	20.73	22.02	21.30	22.57	23.21
	6H	16.08	17.28	16.66	17.85	18.50	22.06	23.26	22.64	23.83	24.48
	8H	16.16	17.31	16.74	17.90	18.55	22.75	23.89	23.33	24.49	25.14
	12H	16.20	17.30	16.79	17.88	18.57	23.50	24.60	24.09	25.18	25.87
4H	2H	14.88	16.16	15.44	16.72	17.35	17.22	18.50	17.78	19.06	19.69
	3H	16.64	17.74	17.21	18.33	18.99	20.06	21.16	20.64	21.76	22.41
	4H	17.29	18.30	17.88	18.90	19.59	21.50	22.51	22.09	23.11	23.80
	6H	17.74	18.63	18.35	19.26	19.96	23.01	23.90	23.62	24.53	25.23
	8H	17.87	18.71	18.48	19.34	20.05	23.79	24.63	24.41	25.26	25.97
	12H	17.94	18.71	18.58	19.36	20.08	24.65	25.42	25.29	26.08	26.79
8H	4H	18.13	18.97	18.75	19.60	20.31	21.70	22.54	22.31	23.17	23.88
	6H	18.79	19.51	19.44	20.18	20.89	23.36	24.07	24.01	24.74	25.46
	8H	19.02	19.67	19.68	20.35	21.07	24.26	24.91	24.92	25.59	26.32
	12H	19.19	19.77	19.85	20.43	21.22	25.30	25.87	25.96	26.54	27.33
12H	4H	18.36	19.12	19.00	19.78	20.49	21.70	22.47	22.34	23.12	23.84
	6H	19.13	19.78	19.79	20.46	21.19	23.39	24.04	24.05	24.71	25.44
	8H	19.47	20.05	20.14	20.72	21.51	24.36	24.94	25.02	25.60	26.39