

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: P242343

Luminaire Tested: S122DRP-S290D935-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242343  
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-S290D935-X4F0-XX-UDD-D-W  
Description: DEFINE 2 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: -

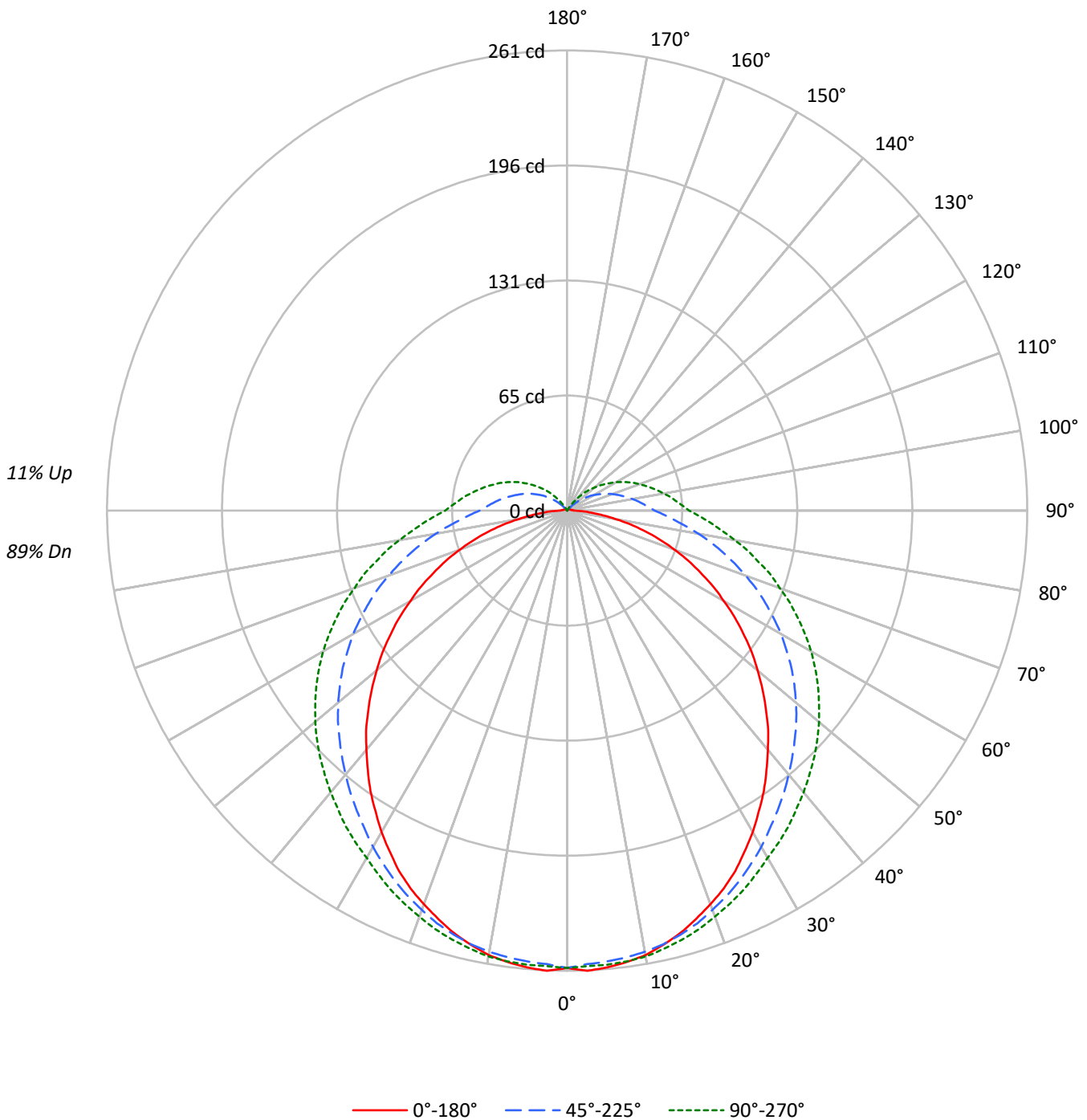
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 989.8 lumens  
Efficiency: N/A  
Efficacy: 85.3 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<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	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°	4941	4941	4941
5°	4964	4736	4709
10°	4933	4576	4512
15°	4864	4413	4308
20°	4779	4238	4113
25°	4694	4072	3936
30°	4573	3901	3761
35°	4453	3737	3634
40°	4326	3596	3506
45°	4203	3468	3396
50°	4074	3349	3288
55°	3937	3226	3176
60°	3768	3094	3060
65°	3598	2945	2925
70°	3402	2782	2778
75°	3147	2623	2641
80°	2757	2455	2499
85°	2368	2298	2380

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4203 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	24.6	2.5
10°-20°	70.5	7.1
20°-30°	106.9	10.8
30°-40°	130.1	13.1
40°-50°	140.0	14.1
50°-60°	136.0	13.7
60°-70°	118.8	12.0
70°-80°	91.4	9.2
80°-90°	61.2	6.2
90°-100°	42.2	4.3
100°-110°	30.8	3.1
110°-120°	20.4	2.1
120°-130°	11.3	1.1
130°-140°	4.8	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°	202.0	20.4
0°-40°	332.1	33.6
0°-60°	608.1	61.4
0°-90°	879.4	88.9
90°-120°	93.4	9.4
90°-150°	110.3	11.1
90°-180°	110.0	11.1
0°-180°	989.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	259	259	259	259	259	
5°	260	259	257	259	259	25
15°	248	249	249	252	252	70
25°	226	228	232	236	237	104
35°	194	201	208	216	219	121
45°	159	170	183	194	198	123
55°	122	136	155	169	174	109
65°	84	102	124	140	144	83
75°	46	67	91	108	112	49
85°	14	37	61	77	82	14
90°	4	26	50	65	69	3
95°	3	21	43	58	62	2
105°	2	13	32	46	50	2
115°	2	6	23	34	38	1
125°	1	1	13	23	26	1
135°	0	0	4	12	15	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°	259.4	259.4	259.4	259.4	259.4
2.5°	261.3	260.1	257.5	259.4	258.6
5°	260.1	259.0	256.8	259.0	258.6
7.5°	258.3	257.5	255.6	258.3	257.9
10°	256.0	255.3	254.1	257.1	256.8
12.5°	252.3	252.6	251.9	254.9	254.5
15°	248.1	248.9	248.9	252.3	251.9
17.5°	242.9	244.4	245.5	248.9	248.9
20°	237.6	239.5	241.0	245.1	245.1
22.5°	232.0	234.2	236.5	240.6	241.3
25°	225.6	228.2	231.6	236.1	237.2
27.5°	218.0	222.2	225.9	231.6	232.3
30°	210.5	215.4	220.3	226.3	227.4
32.5°	202.3	207.9	213.9	221.0	223.3
35°	194.4	200.7	207.9	216.2	218.8
37.5°	185.7	192.9	201.9	210.9	213.5
40°	177.1	185.3	195.5	205.3	208.6
42.5°	168.8	177.1	189.1	200.0	203.4
45°	159.4	169.5	182.7	194.4	198.1
47.5°	150.4	161.3	176.3	188.3	192.5
50°	141.0	152.6	169.5	182.3	186.5
52.5°	132.0	144.4	162.4	175.6	180.1
55°	122.2	135.7	155.3	168.8	173.7
57.5°	112.8	127.8	147.4	162.0	166.9
60°	102.6	118.8	140.2	154.5	159.8
62.5°	93.6	110.5	132.0	147.4	152.3
65°	83.5	101.9	124.1	139.5	144.4
67.5°	74.4	93.6	116.2	131.6	136.8
70°	64.7	84.2	107.5	123.7	128.2
72.5°	55.6	75.9	99.6	115.4	121.1
75°	46.2	67.3	91.4	107.5	112.4
77.5°	37.2	59.0	83.5	99.6	104.9
80°	28.2	51.1	75.6	91.4	96.6
82.5°	20.7	43.2	68.0	83.8	88.7
85°	13.5	36.8	60.9	76.7	82.0
87.5°	8.3	30.8	54.9	70.3	75.2
90°	3.8	25.6	49.6	64.7	69.2
92.5°	3.4	23.3	46.2	60.9	65.4
95°	3.0	20.7	43.2	57.5	62.0
97.5°	2.6	18.8	40.6	54.5	59.0
100°	2.6	16.5	37.6	51.5	55.6
102.5°	2.3	14.7	35.0	48.5	52.6
105°	1.9	12.8	32.3	45.5	49.6
107.5°	1.9	10.9	29.7	42.5	46.6
110°	1.5	9.0	27.4	39.5	43.6



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.5	7.5	24.8	36.8	41.0
115°	1.5	5.6	22.6	33.8	38.0
117.5°	1.1	4.1	19.9	31.2	35.0
120°	1.1	2.6	17.7	28.2	32.3
122.5°	1.1	1.5	15.4	25.6	28.9
125°	0.8	0.8	12.8	22.9	26.3
127.5°	0.8	0.4	10.5	19.9	23.3
130°	0.8	0.4	8.3	17.3	20.3
132.5°	0.8	0.4	6.0	14.7	17.7
135°	0.4	0.4	4.1	12.0	15.0
137.5°	0.4	0.4	2.3	9.4	12.0
140°	0.4	0.0	0.8	6.8	9.0
142.5°	0.4	0.0	0.0	4.5	6.4
145°	0.0	0.0	0.0	2.3	4.1
147.5°	0.0	0.0	0.0	0.4	1.5
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	13.77	15.25	14.30	15.78	16.36	16.83	18.31	17.36	18.84	19.42
	3H	15.27	16.62	15.81	17.16	17.78	19.46	20.81	20.00	21.35	21.97
	4H	15.77	17.06	16.33	17.61	18.24	20.74	22.03	21.30	22.58	23.21
	6H	16.08	17.28	16.66	17.85	18.49	22.07	23.27	22.64	23.83	24.48
	8H	16.16	17.31	16.74	17.90	18.55	22.75	23.90	23.33	24.49	25.14
	12H	16.20	17.30	16.79	17.88	18.56	23.51	24.61	24.10	25.19	25.87
4H	2H	14.88	16.17	15.44	16.72	17.35	17.22	18.51	17.78	19.06	19.69
	3H	16.64	17.74	17.21	18.33	18.98	20.06	21.16	20.63	21.76	22.41
	4H	17.28	18.29	17.87	18.90	19.58	21.50	22.52	22.10	23.12	23.80
	6H	17.73	18.63	18.34	19.25	19.95	23.01	23.91	23.62	24.53	25.23
	8H	17.86	18.70	18.47	19.33	20.03	23.79	24.63	24.40	25.26	25.97
	12H	17.93	18.70	18.57	19.35	20.06	24.66	25.43	25.30	26.08	26.79
8H	4H	18.12	18.97	18.74	19.59	20.30	21.70	22.54	22.31	23.17	23.87
	6H	18.78	19.50	19.43	20.17	20.88	23.36	24.08	24.01	24.74	25.46
	8H	19.02	19.66	19.67	20.34	21.06	24.27	24.91	24.92	25.59	26.31
	12H	19.18	19.76	19.84	20.42	21.21	25.30	25.88	25.96	26.54	27.33
12H	4H	18.35	19.12	18.99	19.77	20.49	21.70	22.47	22.34	23.12	23.84
	6H	19.13	19.78	19.79	20.45	21.17	23.39	24.04	24.05	24.72	25.44
	8H	19.46	20.04	20.13	20.71	21.49	24.36	24.94	25.02	25.60	26.39