

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: P242329

Luminaire Tested: S122DRP-S290D835-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242329  
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-S290D835-X4F0-XX-UDD-D-W  
Description: DEFINE 2 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: -

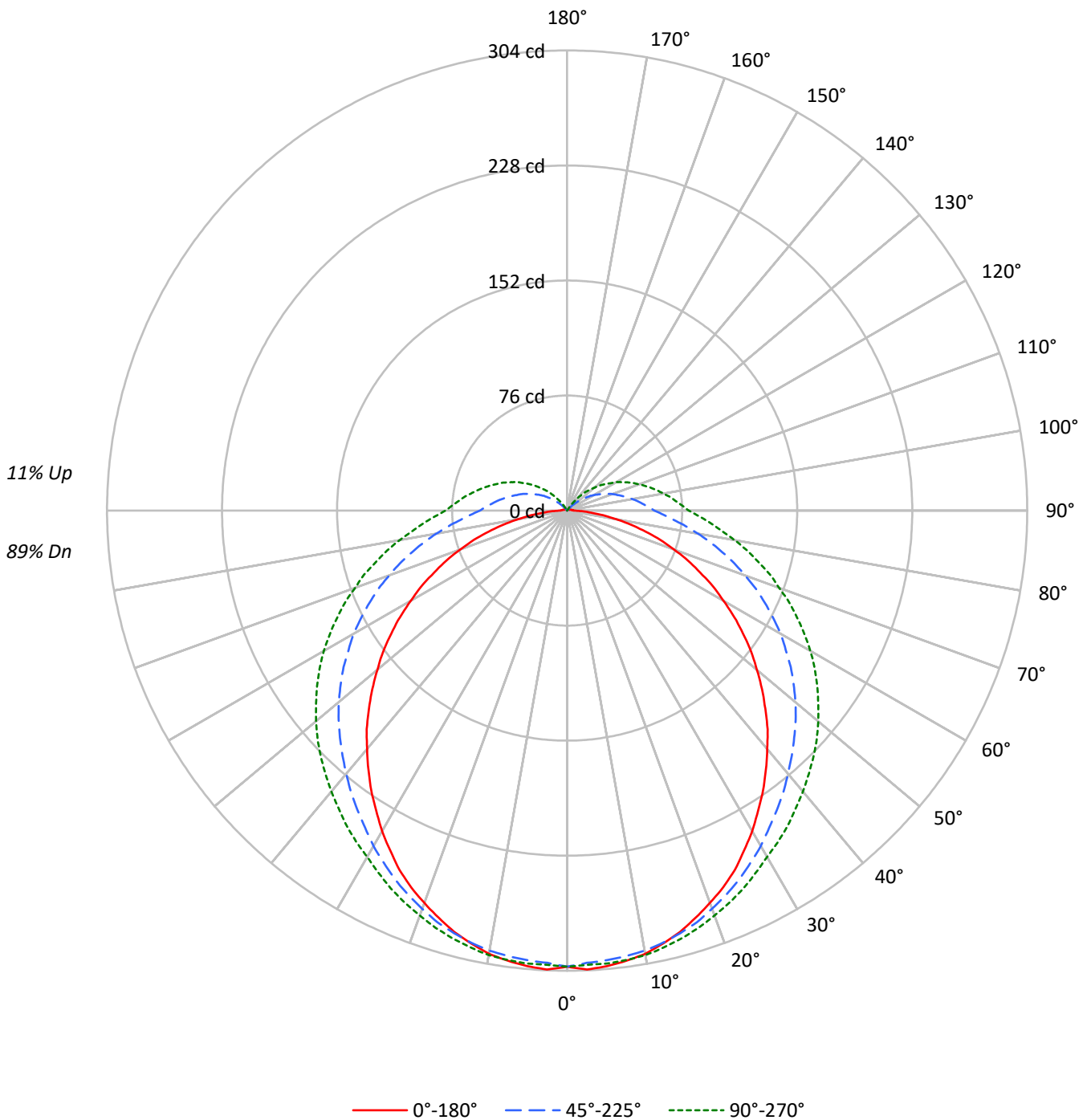
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1149.5 lumens  
Efficiency: N/A  
Efficacy: 99.1 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°	5739	5739	5739
5°	5765	5500	5470
10°	5729	5317	5240
15°	5651	5123	5002
20°	5549	4922	4777
25°	5452	4729	4572
30°	5312	4531	4369
35°	5170	4341	4220
40°	5022	4175	4072
45°	4881	4028	3944
50°	4730	3891	3818
55°	4572	3745	3688
60°	4378	3595	3554
65°	4175	3420	3396
70°	3949	3232	3227
75°	3658	3045	3068
80°	3197	2851	2902
85°	2754	2668	2763

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4881 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	28.6	2.5
10°-20°	81.9	7.1
20°-30°	124.1	10.8
30°-40°	151.1	13.1
40°-50°	162.6	14.1
50°-60°	157.9	13.7
60°-70°	137.9	12.0
70°-80°	106.1	9.2
80°-90°	71.1	6.2
90°-100°	49.0	4.3
100°-110°	35.8	3.1
110°-120°	23.6	2.1
120°-130°	13.2	1.1
130°-140°	5.5	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°	234.6	20.4
0°-40°	385.7	33.6
0°-60°	706.2	61.4
0°-90°	1021.4	88.9
90°-120°	108.5	9.4
90°-150°	128.1	11.1
90°-180°	128.0	11.1
0°-180°	1149.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	301	301	301	301	301	
5°	302	301	298	301	300	29
15°	288	289	289	293	292	81
25°	262	265	269	274	276	120
35°	226	233	242	251	254	141
45°	185	197	212	226	230	143
55°	142	158	180	196	202	127
65°	97	118	144	162	168	96
75°	54	78	106	125	131	57
85°	16	43	71	89	95	17
90°	4	30	58	75	80	3
95°	4	24	50	67	72	3
105°	2	15	38	53	58	2
115°	2	6	26	39	44	2
125°	1	1	15	27	31	1
135°	0	0	5	14	18	0
145°	0	0	0	3	5	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°	301.3	301.3	301.3	301.3	301.3
2.5°	303.5	302.1	299.1	301.3	300.4
5°	302.1	300.8	298.2	300.8	300.4
7.5°	300.0	299.1	296.9	300.0	299.5
10°	297.3	296.5	295.2	298.7	298.2
12.5°	293.0	293.4	292.5	296.0	295.6
15°	288.2	289.0	289.0	293.0	292.5
17.5°	282.1	283.8	285.1	289.0	289.0
20°	275.9	278.1	279.9	284.7	284.7
22.5°	269.4	272.0	274.6	279.4	280.3
25°	262.0	265.0	269.0	274.2	275.5
27.5°	253.2	258.0	262.4	269.0	269.8
30°	244.5	250.2	255.9	262.8	264.2
32.5°	234.9	241.5	248.4	256.7	259.4
35°	225.7	233.2	241.5	251.1	254.1
37.5°	215.7	224.0	234.5	244.9	248.0
40°	205.6	215.3	227.0	238.4	242.3
42.5°	196.0	205.6	219.6	232.3	236.2
45°	185.1	196.9	212.2	225.7	230.1
47.5°	174.6	187.3	204.8	218.7	223.6
50°	163.7	177.3	196.9	211.8	216.6
52.5°	153.3	167.7	188.6	203.9	209.1
55°	141.9	157.6	180.3	196.0	201.7
57.5°	131.0	148.5	171.2	188.2	193.9
60°	119.2	138.0	162.9	179.5	185.6
62.5°	108.7	128.4	153.3	171.2	176.8
65°	96.9	118.3	144.1	162.0	167.7
67.5°	86.5	108.7	134.9	152.8	158.9
70°	75.1	97.8	124.9	143.6	148.9
72.5°	64.6	88.2	115.7	134.0	140.6
75°	53.7	78.2	106.1	124.9	130.6
77.5°	43.2	68.5	96.9	115.7	121.8
80°	32.7	59.4	87.8	106.1	112.2
82.5°	24.0	50.2	79.0	97.4	103.0
85°	15.7	42.8	70.7	89.1	95.2
87.5°	9.6	35.8	63.7	81.6	87.3
90°	4.4	29.7	57.6	75.1	80.3
92.5°	3.9	27.1	53.7	70.7	76.0
95°	3.5	24.0	50.2	66.8	72.0
97.5°	3.1	21.8	47.2	63.3	68.5
100°	3.1	19.2	43.7	59.8	64.6
102.5°	2.6	17.0	40.6	56.3	61.1
105°	2.2	14.8	37.5	52.8	57.6
107.5°	2.2	12.7	34.5	49.3	54.1
110°	1.7	10.5	31.9	45.8	50.6



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.7	8.7	28.8	42.8	47.6
115°	1.7	6.5	26.2	39.3	44.1
117.5°	1.3	4.8	23.1	36.2	40.6
120°	1.3	3.1	20.5	32.7	37.5
122.5°	1.3	1.7	17.9	29.7	33.6
125°	0.9	0.9	14.8	26.6	30.6
127.5°	0.9	0.4	12.2	23.1	27.1
130°	0.9	0.4	9.6	20.1	23.6
132.5°	0.9	0.4	7.0	17.0	20.5
135°	0.4	0.4	4.8	14.0	17.5
137.5°	0.4	0.4	2.6	10.9	14.0
140°	0.4	0.0	0.9	7.9	10.5
142.5°	0.4	0.0	0.0	5.2	7.4
145°	0.0	0.0	0.0	2.6	4.8
147.5°	0.0	0.0	0.0	0.4	1.7
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	14.29	15.77	14.82	16.30	16.88	17.35	18.83	17.88	19.36	19.94
	3H	15.79	17.15	16.33	17.68	18.30	19.98	21.33	20.52	21.87	22.49
	4H	16.29	17.58	16.85	18.13	18.76	21.26	22.55	21.82	23.10	23.73
	6H	16.61	17.81	17.18	18.37	19.02	22.59	23.79	23.16	24.36	25.00
	8H	16.68	17.83	17.27	18.42	19.07	23.27	24.42	23.86	25.01	25.66
	12H	16.72	17.82	17.31	18.40	19.09	24.03	25.13	24.62	25.71	26.39
4H	2H	15.40	16.69	15.96	17.24	17.87	17.74	19.03	18.30	19.58	20.21
	3H	17.16	18.26	17.73	18.85	19.50	20.58	21.68	21.16	22.28	22.93
	4H	17.80	18.82	18.40	19.42	20.10	22.03	23.04	22.62	23.64	24.32
	6H	18.25	19.15	18.86	19.78	20.47	23.53	24.43	24.14	25.05	25.75
	8H	18.38	19.22	18.99	19.85	20.55	24.31	25.15	24.93	25.78	26.49
	12H	18.45	19.22	19.09	19.87	20.59	25.18	25.95	25.82	26.60	27.31
8H	4H	18.65	19.49	19.26	20.11	20.82	22.22	23.06	22.83	23.69	24.40
	6H	19.31	20.02	19.95	20.69	21.40	23.88	24.60	24.53	25.27	25.98
	8H	19.54	20.19	20.19	20.86	21.58	24.79	25.43	25.44	26.11	26.83
	12H	19.70	20.28	20.36	20.94	21.73	25.82	26.40	26.48	27.06	27.85
12H	4H	18.88	19.64	19.51	20.30	21.01	22.23	22.99	22.86	23.65	24.36
	6H	19.65	20.30	20.31	20.97	21.70	23.91	24.56	24.57	25.24	25.96
	8H	19.99	20.57	20.65	21.23	22.01	24.88	25.46	25.54	26.12	26.91