

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: P242693

Luminaire Tested: S124DRP-S575D940-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242693  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-16)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124DRP-S575D940-X4F0-XX-UDD-D-W  
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

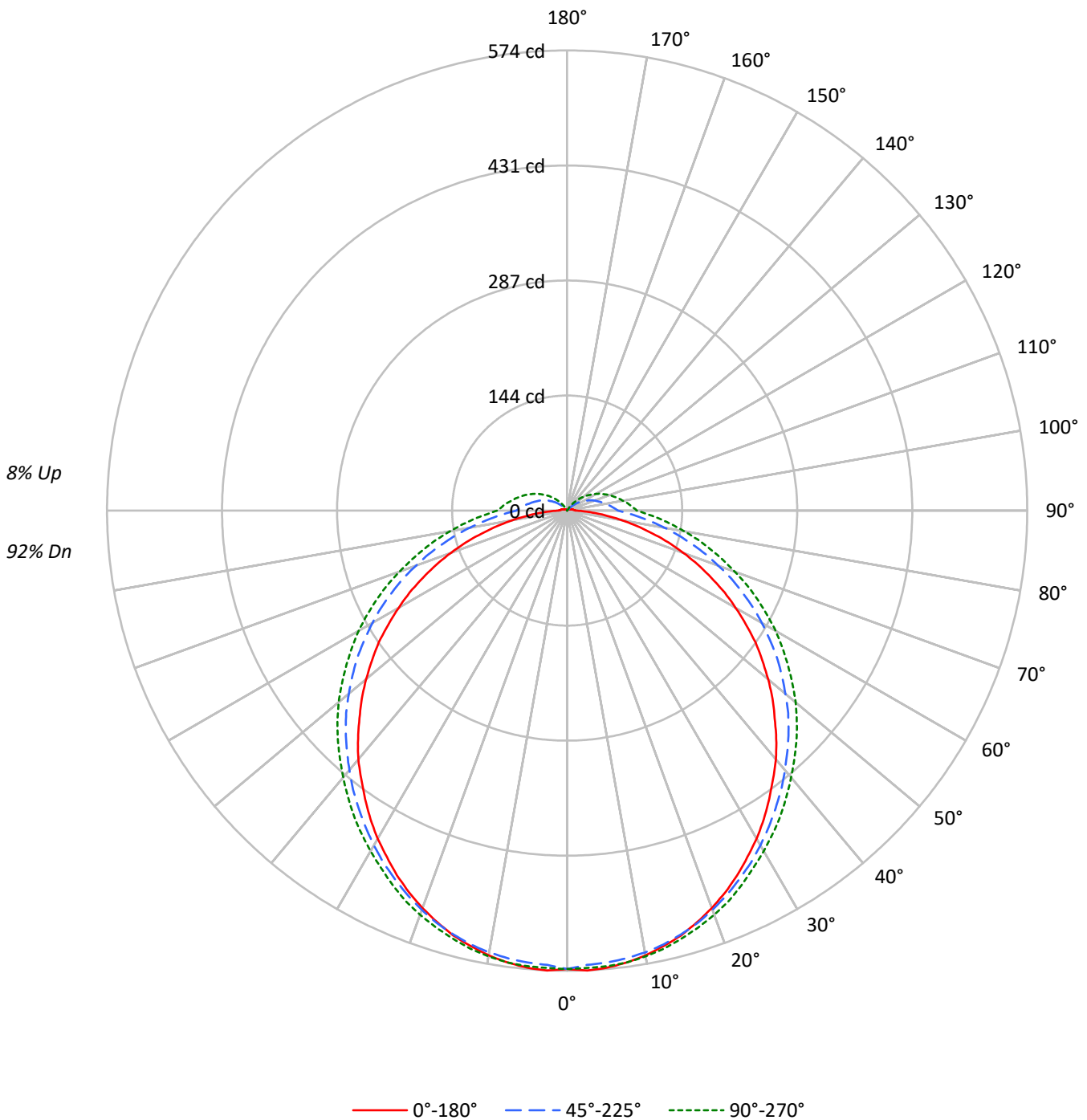
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1949.4 lumens  
Efficiency: N/A  
Efficacy: 103.7 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.31' x L: 3.88' x H: 0.08')  
CIE Type: Direct  
  
Input Watts (W): 18.8  
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										
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	50	30	10	50	30	10	0														
RCR																																						
0	117	117	117	117	114	114	114	114	107	107	107	101	101	101	95	95	95	92																				
1	105	100	95	91	102	97	93	89	91	88	84	86	83	80	81	79	77	74																				
2	95	86	79	73	92	84	77	71	79	73	68	74	70	66	70	67	63	60																				
3	87	75	67	60	83	73	65	59	69	62	57	65	60	55	62	57	53	50																				
4	79	66	57	50	76	65	56	49	61	54	48	58	52	47	55	49	45	43																				
5	73	59	50	43	70	58	49	42	55	47	41	52	45	40	49	44	39	37																				
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	45	39	34	32																				
7	62	48	39	33	60	47	38	32	45	37	32	43	36	31	41	35	30	28																				
8	58	44	35	29	56	43	35	29	41	33	28	39	32	28	37	31	27	25																				
9	54	40	32	26	52	39	31	26	38	30	25	36	29	25	34	29	24	22																				
10	50	37	29	24	49	36	29	23	35	28	23	33	27	23	32	26	22	20																				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	5083	5083	5083
5°	5098	4962	4974
10°	5066	4876	4868
15°	5020	4777	4746
20°	4952	4668	4626
25°	4875	4547	4496
30°	4790	4427	4362
35°	4695	4305	4245
40°	4620	4188	4122
45°	4507	4079	4016
50°	4412	3954	3904
55°	4312	3835	3772
60°	4160	3685	3652
65°	3991	3523	3504
70°	3786	3339	3333
75°	3500	3135	3174
80°	3185	2935	3014
85°	2775	2745	2903

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4507 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	54.2	2.8
10°-20°	155.2	8.0
20°-30°	234.7	12.0
30°-40°	283.9	14.6
40°-50°	300.2	15.4
50°-60°	282.5	14.5
60°-70°	234.4	12.0
70°-80°	164.5	8.4
80°-90°	92.7	4.8
90°-100°	55.2	2.8
100°-110°	40.9	2.1
110°-120°	27.4	1.4
120°-130°	15.5	0.8
130°-140°	6.7	0.3
140°-150°	1.3	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	444.1	22.8
0°-40°	728.0	37.3
0°-60°	1310.7	67.2
0°-90°	1802.4	92.5
90°-120°	123.6	6.3
90°-150°	147.0	7.5
90°-180°	147.0	7.5
0°-180°	1949.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	572	572	572	572	572	
5°	572	570	566	571	570	54
15°	549	549	547	553	553	155
25°	502	506	508	515	515	231
35°	439	447	453	462	464	275
45°	366	378	391	401	405	283
55°	287	300	320	332	336	256
65°	198	219	241	257	262	197
75°	110	134	161	179	184	117
85°	34	61	90	109	115	35
90°	10	36	63	82	87	7
95°	8	30	56	73	79	7
105°	6	19	42	58	63	7
115°	4	10	30	44	49	4
125°	3	2	18	30	34	2
135°	1	1	6	16	20	1
145°	1	0	0	4	6	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°	571.8	571.8	571.8	571.8	571.8
2.5°	574.3	572.4	567.3	571.8	571.1
5°	572.4	570.5	566.0	571.1	570.5
7.5°	568.6	567.3	563.4	569.2	568.6
10°	563.4	562.8	559.6	565.4	564.7
12.5°	556.4	556.4	554.5	559.6	559.6
15°	548.7	549.4	547.4	553.2	552.6
17.5°	538.5	540.4	539.7	545.5	544.9
20°	527.6	529.5	530.1	536.5	536.5
22.5°	515.4	518.0	519.3	525.7	526.9
25°	502.0	505.8	507.7	514.8	515.4
27.5°	487.2	493.0	495.6	502.0	502.6
30°	472.5	477.6	482.1	489.2	490.4
32.5°	456.5	462.9	468.0	476.4	477.6
35°	439.2	446.9	453.3	462.3	464.2
37.5°	421.9	430.9	438.6	447.5	449.5
40°	405.3	413.6	422.6	432.2	434.7
42.5°	386.1	395.7	406.6	417.5	419.4
45°	366.2	378.4	390.6	401.4	404.7
47.5°	347.7	359.8	373.9	384.8	388.6
50°	327.2	341.3	355.4	368.2	372.0
52.5°	306.7	320.8	337.4	350.2	354.1
55°	286.8	300.3	319.5	332.3	336.1
57.5°	264.4	281.1	299.6	315.0	318.2
60°	242.7	259.3	280.4	295.2	300.3
62.5°	221.5	240.1	261.2	276.0	281.1
65°	198.5	219.0	240.7	256.7	261.9
67.5°	176.7	198.5	221.5	237.5	242.7
70°	154.3	176.1	200.4	217.7	222.2
72.5°	132.5	154.9	181.2	197.8	203.0
75°	110.1	133.8	160.7	178.6	184.4
77.5°	89.0	114.0	142.1	160.1	166.5
80°	69.8	95.4	123.6	142.8	147.9
82.5°	50.6	77.5	105.6	125.5	131.3
85°	33.9	60.8	89.6	108.8	115.2
87.5°	21.1	47.4	75.6	94.1	99.9
90°	10.2	35.9	63.4	82.0	87.1
92.5°	9.6	32.0	59.5	77.5	82.6
95°	8.3	29.5	55.7	73.0	78.8
97.5°	7.7	26.3	52.5	69.1	74.9
100°	7.0	23.7	48.7	65.9	70.4
102.5°	7.0	21.1	45.5	62.1	67.2
105°	5.8	18.6	42.3	58.3	63.4
107.5°	5.8	16.6	39.1	55.1	59.5
110°	5.1	14.1	36.5	51.2	56.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	4.5	12.2	33.3	47.4	52.5
115°	3.8	9.6	30.1	44.2	48.7
117.5°	3.8	7.7	26.9	40.3	45.5
120°	3.2	5.1	23.7	36.5	41.6
122.5°	3.2	3.2	20.5	33.3	37.8
125°	2.6	1.9	17.9	30.1	33.9
127.5°	2.6	1.9	14.7	26.3	30.7
130°	1.9	1.3	11.5	23.0	26.9
132.5°	1.9	1.3	9.0	19.8	23.7
135°	1.3	1.3	5.8	16.0	19.8
137.5°	1.3	0.6	3.2	12.8	16.0
140°	1.3	0.6	1.3	9.6	12.8
142.5°	0.6	0.6	0.0	7.0	9.6
145°	0.6	0.0	0.0	3.8	6.4
147.5°	0.6	0.0	0.0	0.6	3.2
150°	0.6	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	15.44	16.97	15.92	17.43	17.93	16.99	18.52	17.47	18.98	19.48
	3H	17.08	18.47	17.57	18.94	19.48	19.30	20.69	19.79	21.16	21.70
	4H	17.65	18.96	18.16	19.45	20.01	20.36	21.67	20.87	22.17	22.72
	6H	18.03	19.25	18.55	19.76	20.33	21.41	22.64	21.94	23.14	23.71
	8H	18.13	19.31	18.67	19.84	20.41	21.93	23.10	22.47	23.63	24.21
	12H	18.20	19.32	18.74	19.84	20.45	22.48	23.61	23.03	24.13	24.74
4H	2H	16.29	17.60	16.80	18.10	18.65	17.49	18.81	18.00	19.30	19.85
	3H	18.17	19.29	18.69	19.82	20.40	20.02	21.14	20.54	21.68	22.25
	4H	18.87	19.90	19.42	20.44	21.05	21.24	22.26	21.78	22.81	23.41
	6H	19.39	20.29	19.95	20.86	21.48	22.47	23.37	23.03	23.94	24.56
	8H	19.55	20.39	20.12	20.97	21.60	23.08	23.93	23.65	24.50	25.13
	12H	19.65	20.42	20.24	21.02	21.65	23.74	24.51	24.33	25.11	25.75
8H	4H	19.45	20.30	20.02	20.87	21.50	21.49	22.34	22.06	22.91	23.55
	6H	20.15	20.86	20.75	21.48	22.12	22.89	23.60	23.49	24.22	24.86
	8H	20.40	21.04	21.01	21.67	22.32	23.63	24.27	24.24	24.90	25.55
	12H	20.58	21.16	21.20	21.77	22.49	24.45	25.03	25.07	25.64	26.36
12H	4H	19.59	20.36	20.18	20.96	21.59	21.51	22.28	22.10	22.88	23.52
	6H	20.36	21.01	20.97	21.63	22.28	22.93	23.58	23.55	24.21	24.86
	8H	20.70	21.27	21.31	21.89	22.60	23.74	24.32	24.36	24.93	25.65