

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: P242494

Luminaire Tested: S123DRP-S1000D927-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242494  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-15)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DRP-S1000D927-X4F0-XX-UDD-D-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: -

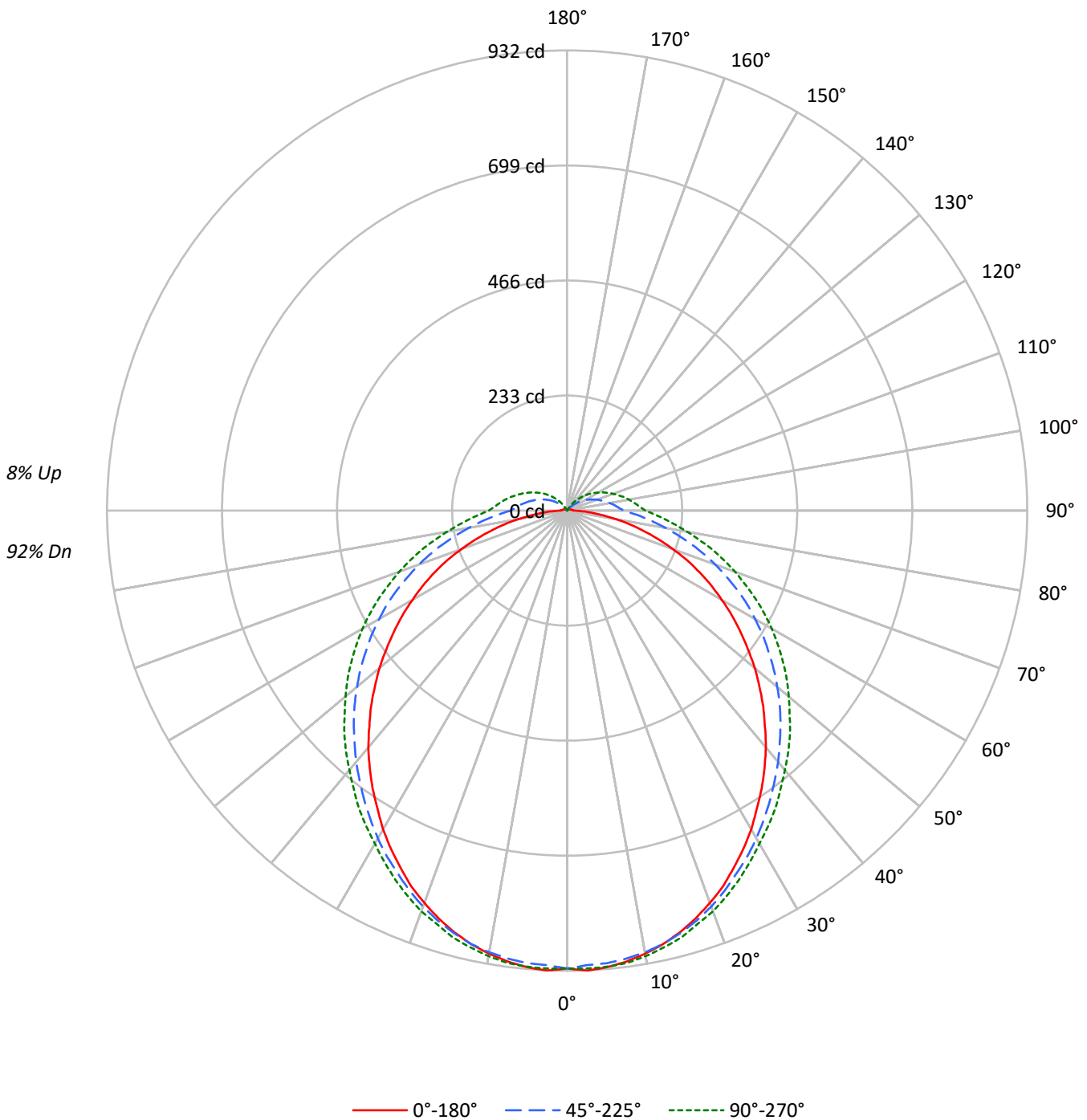
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3116.7 lumens  
Efficiency: N/A  
Efficacy: 89.6 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')  
CIE Type: Direct  
  
Input Watts (W): 34.8  
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										
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	113	113	113	113	106	106	106	100	100	100	94	94	94	92																				
1	105	100	95	90	102	97	92	88	91	87	84	85	82	80	80	78	76	73																				
2	95	86	79	72	92	83	77	71	79	73	68	74	69	65	70	66	63	60																				
3	86	75	67	60	83	73	65	59	69	62	56	65	59	54	61	56	52	50																				
4	79	66	57	50	76	64	56	49	61	54	48	57	51	46	54	49	45	42																				
5	72	59	50	43	70	58	49	42	54	47	41	52	45	40	49	43	39	36																				
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	44	38	34	32																				
7	62	48	39	33	60	47	38	32	45	37	32	42	36	31	40	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	37	30	25	36	29	25	34	28	24	22																				
10	50	37	29	24	49	36	29	24	35	28	23	33	27	23	32	26	22	20																				

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

	0°	45°	90°
0°	11241	11241	11241
5°	11275	10937	10936
10°	11173	10666	10598
15°	11028	10362	10235
20°	10823	10018	9839
25°	10568	9627	9426
30°	10306	9274	9010
35°	10015	8902	8674
40°	9734	8561	8316
45°	9426	8235	8027
50°	9119	7910	7708
55°	8781	7577	7419
60°	8454	7238	7122
65°	8115	6877	6773
70°	7606	6471	6412
75°	6963	6006	6042
80°	6222	5542	5619
85°	5526	5194	5341

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9426 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	88.0	2.8
10°-20°	250.8	8.0
20°-30°	375.0	12.0
30°-40°	447.8	14.4
40°-50°	468.5	15.0
50°-60°	439.6	14.1
60°-70°	367.2	11.8
70°-80°	262.6	8.4
80°-90°	156.2	5.0
90°-100°	98.2	3.2
100°-110°	72.2	2.3
110°-120°	48.2	1.5
120°-130°	27.5	0.9
130°-140°	12.3	0.4
140°-150°	2.6	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	713.8	22.9
0°-40°	1161.6	37.3
0°-60°	2069.7	66.4
0°-90°	2855.8	91.6
90°-120°	218.5	7.0
90°-150°	260.9	8.4
90°-180°	261.0	8.4
0°-180°	3116.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	927	927	927	927	927	
5°	928	926	920	928	927	88
15°	884	887	886	896	895	249
25°	798	808	811	824	824	368
35°	687	703	716	731	735	430
45°	562	586	611	630	638	433
55°	428	462	498	525	533	383
65°	296	335	380	410	420	293
75°	161	208	259	292	304	172
85°	50	100	154	188	198	51
90°	13	63	114	148	159	9
95°	11	50	100	131	141	9
105°	8	32	76	104	113	8
115°	5	17	54	78	86	5
125°	3	3	32	54	61	3
135°	2	1	12	30	35	2
145°	1	0	0	8	12	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°	927.4	927.4	927.4	927.4	927.4
2.5°	932.4	929.4	921.3	929.4	928.4
5°	928.4	926.4	920.3	928.4	927.4
7.5°	921.3	921.3	915.3	925.4	924.4
10°	911.2	913.2	908.2	918.3	916.3
12.5°	899.1	902.1	899.1	908.2	906.2
15°	883.9	887.0	886.0	896.1	895.1
17.5°	865.8	871.8	870.8	879.9	877.9
20°	845.6	851.6	853.6	862.7	863.7
22.5°	824.3	830.4	833.4	845.6	844.6
25°	798.1	808.2	811.2	824.3	824.3
27.5°	772.8	783.9	790.0	801.1	802.1
30°	745.5	758.7	766.8	778.9	778.9
32.5°	715.2	730.4	741.5	754.6	757.7
35°	687.0	703.1	716.3	731.4	735.4
37.5°	656.6	674.8	690.0	707.2	710.2
40°	626.3	644.5	664.7	681.9	685.9
42.5°	593.0	616.2	637.5	656.6	662.7
45°	561.7	585.9	611.2	630.4	638.5
47.5°	528.3	555.6	583.9	605.1	611.2
50°	496.0	524.3	555.6	578.9	585.9
52.5°	461.7	492.0	527.3	551.6	560.7
55°	428.3	461.7	498.0	525.3	533.4
57.5°	396.0	430.4	469.8	497.0	506.1
60°	361.7	398.0	439.4	467.7	478.8
62.5°	329.3	366.7	411.2	439.4	449.6
65°	296.0	335.4	379.8	410.2	420.3
67.5°	262.7	304.1	348.5	381.9	389.9
70°	227.3	270.7	319.2	351.6	361.7
72.5°	195.0	238.4	288.9	322.3	332.4
75°	160.6	208.1	258.6	292.0	304.1
77.5°	131.3	178.8	229.3	264.7	273.8
80°	100.0	149.5	202.0	236.4	246.5
82.5°	72.7	123.2	176.8	211.1	221.2
85°	49.5	100.0	153.6	187.9	198.0
87.5°	30.3	80.8	132.3	166.7	176.8
90°	13.1	62.6	114.2	148.5	158.6
92.5°	12.1	55.6	106.1	139.4	148.5
95°	11.1	50.5	100.0	131.3	141.4
97.5°	10.1	46.5	94.0	124.3	134.4
100°	9.1	41.4	87.9	117.2	127.3
102.5°	8.1	36.4	81.8	110.1	120.2
105°	8.1	32.3	75.8	104.1	113.1
107.5°	7.1	28.3	69.7	97.0	106.1
110°	6.1	24.2	64.7	90.9	99.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	6.1	20.2	58.6	83.8	92.9
115°	5.1	17.2	53.5	77.8	85.9
117.5°	5.1	13.1	47.5	71.7	79.8
120°	4.0	9.1	42.4	65.7	72.7
122.5°	4.0	6.1	37.4	59.6	66.7
125°	3.0	3.0	32.3	53.5	60.6
127.5°	3.0	2.0	27.3	47.5	54.6
130°	3.0	2.0	22.2	41.4	47.5
132.5°	2.0	2.0	17.2	35.4	42.4
135°	2.0	1.0	12.1	30.3	35.4
137.5°	2.0	1.0	8.1	24.2	29.3
140°	1.0	1.0	4.0	19.2	24.2
142.5°	1.0	0.0	0.0	13.1	18.2
145°	1.0	0.0	0.0	8.1	12.1
147.5°	0.0	0.0	0.0	3.0	7.1
150°	0.0	0.0	0.0	0.0	2.0
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	17.46	18.96	17.95	19.44	19.96	19.45	20.96	19.94	21.44	21.96
	3H	19.02	20.39	19.52	20.88	21.43	21.83	23.21	22.34	23.70	24.25
	4H	19.54	20.84	20.06	21.34	21.91	22.95	24.25	23.47	24.75	25.32
	6H	19.88	21.09	20.42	21.61	22.20	24.05	25.26	24.59	25.78	26.37
	8H	19.97	21.13	20.52	21.67	22.26	24.61	25.77	25.16	26.31	26.90
	12H	20.02	21.13	20.57	21.67	22.29	25.22	26.33	25.77	26.86	27.49
4H	2H	18.37	19.67	18.89	20.17	20.74	19.91	21.21	20.44	21.72	22.29
	3H	20.17	21.27	20.70	21.82	22.42	22.51	23.62	23.04	24.17	24.76
	4H	20.83	21.84	21.39	22.40	23.03	23.78	24.79	24.33	25.35	25.97
	6H	21.31	22.20	21.88	22.78	23.42	25.06	25.95	25.63	26.54	27.18
	8H	21.44	22.28	22.02	22.87	23.52	25.71	26.55	26.29	27.14	27.79
	12H	21.53	22.29	22.13	22.90	23.56	26.43	27.19	27.03	27.80	28.46
8H	4H	21.47	22.31	22.05	22.89	23.54	24.00	24.84	24.58	25.43	26.08
	6H	22.12	22.83	22.73	23.46	24.12	25.44	26.15	26.05	26.78	27.44
	8H	22.35	23.00	22.98	23.63	24.30	26.22	26.86	26.84	27.50	28.16
	12H	22.53	23.10	23.15	23.72	24.46	27.10	27.67	27.73	28.30	29.03
12H	4H	21.62	22.38	22.22	23.00	23.65	24.01	24.78	24.61	25.39	26.04
	6H	22.36	23.01	22.99	23.64	24.31	25.48	26.13	26.11	26.76	27.43
	8H	22.69	23.26	23.31	23.88	24.62	26.33	26.90	26.95	27.52	28.26