

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: P242499

Luminaire Tested: S123DRP-S1000D830-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242499  
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-S1000D830-X4F0-XX-UDD-D-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

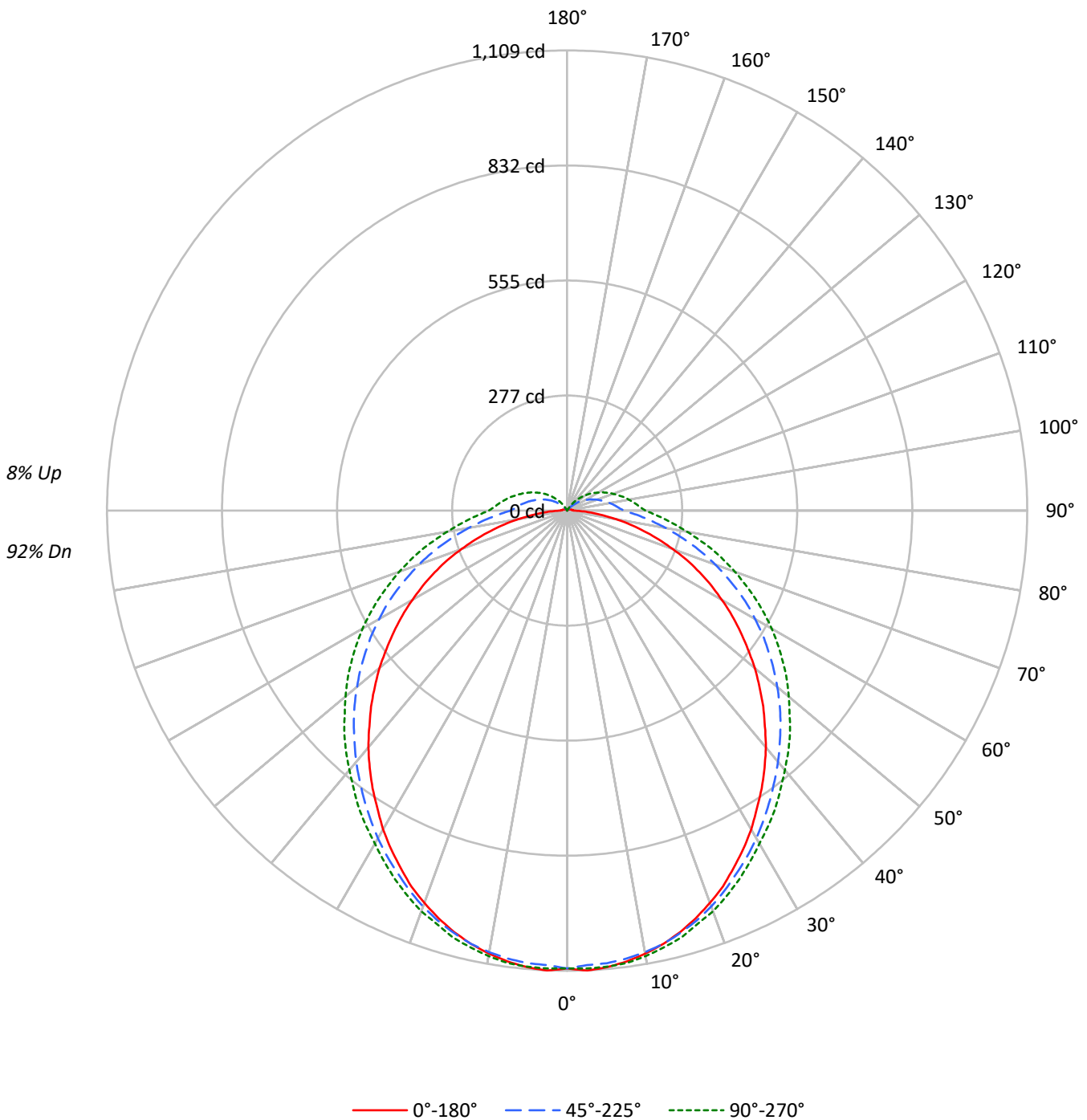
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3708.3 lumens  
Efficiency: N/A  
Efficacy: 106.6 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

TEST NUMBER: P242499

CATALOG NUMBER: S123DRP-S1000D830-X4F0-XX-UDD-D-W

### 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	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°	13375	13375	13375
5°	13415	13013	13012
10°	13294	12691	12610
15°	13122	12328	12177
20°	12877	11920	11707
25°	12574	11454	11216
30°	12264	11034	10720
35°	11914	10591	10320
40°	11582	10187	9894
45°	11215	9798	9549
50°	10851	9412	9171
55°	10448	9017	8827
60°	10057	8614	8474
65°	9656	8182	8057
70°	9048	7699	7629
75°	8285	7147	7189
80°	7404	6595	6686
85°	6575	6178	6355

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 11215 cd/sqm



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CATALOG NUMBER: S123DRP-S1000D830-X4F0-XX-UDD-D-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	104.7	2.8
10°-20°	298.4	8.0
20°-30°	446.2	12.0
30°-40°	532.8	14.4
40°-50°	557.4	15.0
50°-60°	523.1	14.1
60°-70°	436.9	11.8
70°-80°	312.4	8.4
80°-90°	185.9	5.0
90°-100°	116.8	3.2
100°-110°	85.9	2.3
110°-120°	57.3	1.5
120°-130°	32.7	0.9
130°-140°	14.7	0.4
140°-150°	3.1	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	849.3	22.9
0°-40°	1382.1	37.3
0°-60°	2462.6	66.4
0°-90°	3397.8	91.6
90°-120°	260.0	7.0
90°-150°	310.5	8.4
90°-180°	310.0	8.4
0°-180°	3708.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1103	1103	1103	1103	1103	
5°	1105	1102	1095	1105	1103	105
15°	1052	1055	1054	1066	1065	296
25°	950	962	965	981	981	438
35°	817	837	852	870	875	511
45°	668	697	727	750	760	515
55°	510	549	593	625	635	456
65°	352	399	452	488	500	348
75°	191	248	308	347	362	204
85°	59	119	183	224	236	61
90°	16	74	136	177	189	11
95°	13	60	119	156	168	10
105°	10	38	90	124	135	10
115°	6	20	64	93	102	6
125°	4	4	38	64	72	4
135°	2	1	14	36	42	2
145°	1	0	0	10	14	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°	1103.4	1103.4	1103.4	1103.4	1103.4
2.5°	1109.4	1105.8	1096.2	1105.8	1104.6
5°	1104.6	1102.2	1095.0	1104.6	1103.4
7.5°	1096.2	1096.2	1089.0	1101.0	1099.8
10°	1084.2	1086.6	1080.6	1092.6	1090.2
12.5°	1069.8	1073.4	1069.8	1080.6	1078.2
15°	1051.7	1055.3	1054.1	1066.2	1064.9
17.5°	1030.1	1037.3	1036.1	1046.9	1044.5
20°	1006.1	1013.3	1015.7	1026.5	1027.7
22.5°	980.8	988.0	991.6	1006.1	1004.9
25°	949.6	961.6	965.2	980.8	980.8
27.5°	919.5	932.7	939.9	953.2	954.4
30°	887.1	902.7	912.3	926.7	926.7
32.5°	851.0	869.0	882.2	897.9	901.5
35°	817.3	836.6	852.2	870.2	875.0
37.5°	781.3	802.9	820.9	841.4	845.0
40°	745.2	766.9	790.9	811.3	816.1
42.5°	705.6	733.2	758.4	781.3	788.5
45°	668.3	697.1	727.2	750.0	759.6
47.5°	628.6	661.1	694.7	720.0	727.2
50°	590.2	623.8	661.1	688.7	697.1
52.5°	549.3	585.4	627.4	656.3	667.1
55°	509.6	549.3	592.6	625.0	634.6
57.5°	471.2	512.0	558.9	591.4	602.2
60°	430.3	473.6	522.9	556.5	569.7
62.5°	391.8	436.3	489.2	522.9	534.9
65°	352.2	399.1	451.9	488.0	500.0
67.5°	312.5	361.8	414.7	454.3	464.0
70°	270.4	322.1	379.8	418.3	430.3
72.5°	232.0	283.7	343.8	383.4	395.4
75°	191.1	247.6	307.7	347.4	361.8
77.5°	156.3	212.7	272.8	314.9	325.7
80°	119.0	177.9	240.4	281.3	293.3
82.5°	86.5	146.6	210.3	251.2	263.2
85°	58.9	119.0	182.7	223.6	235.6
87.5°	36.1	96.2	157.5	198.3	210.3
90°	15.6	74.5	135.8	176.7	188.7
92.5°	14.4	66.1	126.2	165.9	176.7
95°	13.2	60.1	119.0	156.3	168.3
97.5°	12.0	55.3	111.8	147.8	159.9
100°	10.8	49.3	104.6	139.4	151.4
102.5°	9.6	43.3	97.4	131.0	143.0
105°	9.6	38.5	90.1	123.8	134.6
107.5°	8.4	33.7	82.9	115.4	126.2
110°	7.2	28.8	76.9	108.2	117.8



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CATALOG NUMBER: S123DRP-S1000D830-X4F0-XX-UDD-D-W

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	7.2	24.0	69.7	99.8	110.6
115°	6.0	20.4	63.7	92.6	102.2
117.5°	6.0	15.6	56.5	85.3	95.0
120°	4.8	10.8	50.5	78.1	86.5
122.5°	4.8	7.2	44.5	70.9	79.3
125°	3.6	3.6	38.5	63.7	72.1
127.5°	3.6	2.4	32.5	56.5	64.9
130°	3.6	2.4	26.4	49.3	56.5
132.5°	2.4	2.4	20.4	42.1	50.5
135°	2.4	1.2	14.4	36.1	42.1
137.5°	2.4	1.2	9.6	28.8	34.9
140°	1.2	1.2	4.8	22.8	28.8
142.5°	1.2	0.0	0.0	15.6	21.6
145°	1.2	0.0	0.0	9.6	14.4
147.5°	0.0	0.0	0.0	3.6	8.4
150°	0.0	0.0	0.0	0.0	2.4
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	18.06	19.57	18.55	20.05	20.56	20.06	21.56	20.55	22.05	22.56
	3H	19.62	20.99	20.12	21.48	22.04	22.44	23.81	22.94	24.30	24.86
	4H	20.14	21.44	20.66	21.95	22.52	23.55	24.85	24.07	25.36	25.93
	6H	20.48	21.70	21.02	22.22	22.80	24.66	25.87	25.19	26.39	26.97
	8H	20.57	21.73	21.12	22.28	22.87	25.21	26.37	25.76	26.92	27.51
	12H	20.62	21.73	21.17	22.27	22.89	25.82	26.93	26.37	27.47	28.09
4H	2H	18.97	20.27	19.49	20.78	21.35	20.52	21.82	21.04	22.33	22.90
	3H	20.77	21.88	21.31	22.43	23.02	23.11	24.22	23.65	24.77	25.36
	4H	21.43	22.45	21.99	23.01	23.63	24.38	25.39	24.94	25.95	26.58
	6H	21.91	22.80	22.48	23.39	24.03	25.66	26.56	26.24	27.14	27.78
	8H	22.04	22.89	22.63	23.47	24.12	26.31	27.15	26.89	27.74	28.39
	12H	22.13	22.89	22.73	23.51	24.16	27.03	27.79	27.63	28.41	29.06
8H	4H	22.07	22.91	22.65	23.49	24.14	24.60	25.45	25.19	26.03	26.68
	6H	22.73	23.44	23.34	24.06	24.72	26.05	26.76	26.66	27.38	28.04
	8H	22.96	23.60	23.58	24.24	24.90	26.82	27.46	27.45	28.10	28.77
	12H	23.13	23.70	23.76	24.33	25.06	27.70	28.28	28.33	28.90	29.64
12H	4H	22.22	22.99	22.83	23.60	24.25	24.62	25.38	25.22	25.99	26.65
	6H	22.97	23.61	23.59	24.25	24.91	26.09	26.73	26.71	27.37	28.03
	8H	23.29	23.86	23.92	24.49	25.22	26.93	27.50	27.56	28.13	28.86