

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: P242495

Luminaire Tested: S123DRP-S1165D927-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242495
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-S1165D927-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

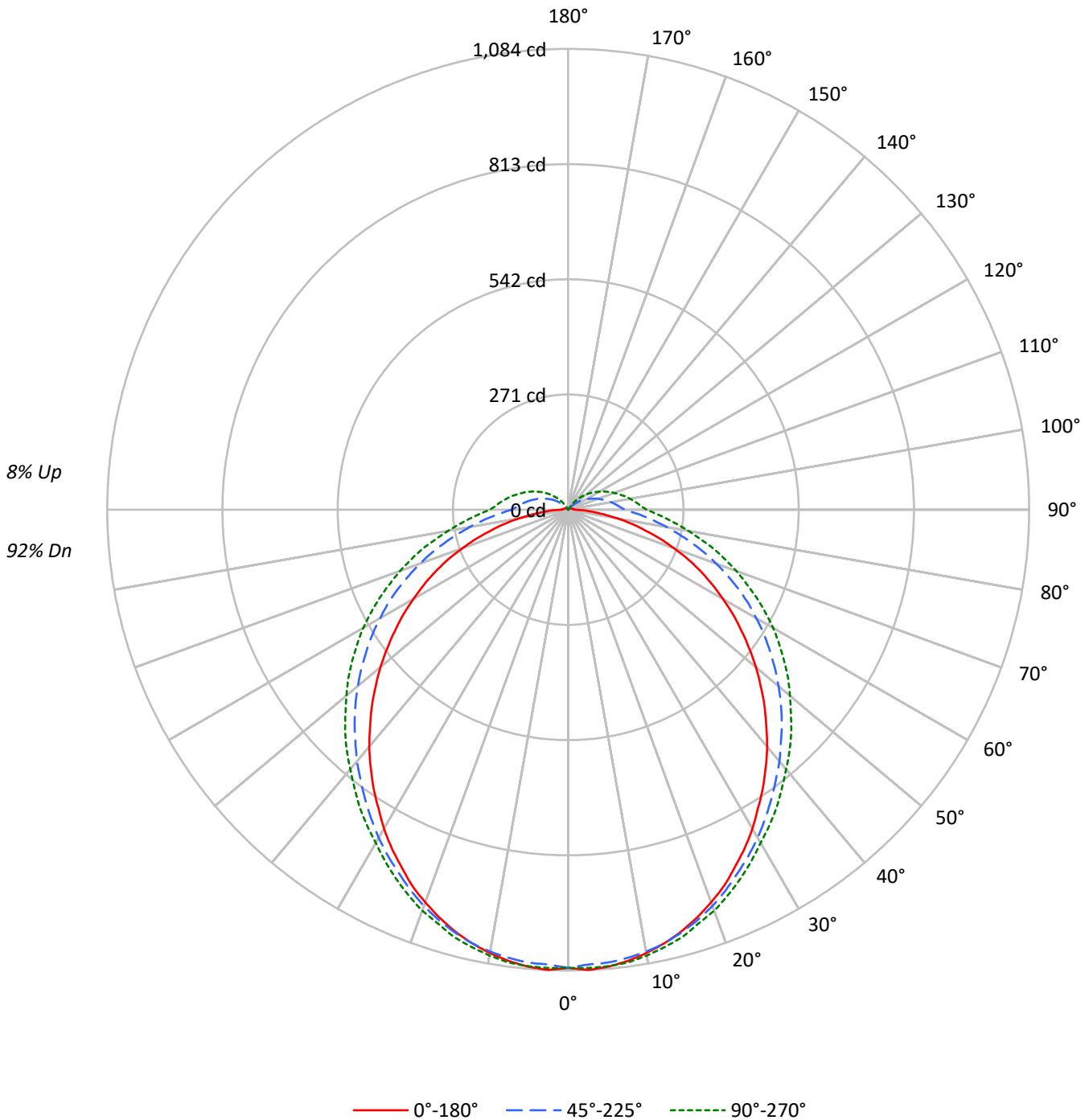
Lumens per Lamp: N/A
Luminaire Lumens: 3622.2 lumens
Efficiency: N/A
Efficacy: 88.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 41.1
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				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°	13064	13064	13064
5°	13104	12712	12710
10°	12985	12396	12317
15°	12818	12043	11894
20°	12578	11643	11435
25°	12281	11188	10955
30°	11979	10778	10471
35°	11639	10345	10081
40°	11314	9950	9665
45°	10955	9570	9328
50°	10600	9193	8959
55°	10206	8807	8622
60°	9823	8413	8278
65°	9431	7994	7871
70°	8841	7521	7451
75°	8094	6982	7022
80°	7229	6441	6531
85°	6419	6036	6206

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 10955 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	102.2	2.8
10°-20°	291.5	8.0
20°-30°	435.9	12.0
30°-40°	520.4	14.4
40°-50°	544.5	15.0
50°-60°	511.0	14.1
60°-70°	426.8	11.8
70°-80°	305.2	8.4
80°-90°	181.6	5.0
90°-100°	114.1	3.1
100°-110°	83.9	2.3
110°-120°	56.0	1.5
120°-130°	31.9	0.9
130°-140°	14.3	0.4
140°-150°	3.0	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	829.6	22.9
0°-40°	1350.0	37.3
0°-60°	2405.4	66.4
0°-90°	3319.0	91.6
90°-120°	254.0	7.0
90°-150°	303.3	8.4
90°-180°	303.0	8.4
0°-180°	3622.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1078	1078	1078	1078	1078	
5°	1079	1077	1070	1079	1078	102
15°	1027	1031	1030	1041	1040	289
25°	928	939	943	958	958	428
35°	798	817	832	850	855	499
45°	653	681	710	733	742	503
55°	498	537	579	610	620	446
65°	344	390	442	477	488	340
75°	187	242	301	339	353	199
85°	58	116	178	218	230	59
90°	15	73	133	173	184	11
95°	13	59	116	153	164	10
105°	9	38	88	121	132	9
115°	6	20	62	90	100	6
125°	4	4	38	62	70	4
135°	2	1	14	35	41	2
145°	1	0	0	9	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°	1077.8	1077.8	1077.8	1077.8	1077.8
2.5°	1083.7	1080.1	1070.8	1080.1	1079.0
5°	1079.0	1076.6	1069.6	1079.0	1077.8
7.5°	1070.8	1070.8	1063.7	1075.5	1074.3
10°	1059.0	1061.4	1055.5	1067.2	1064.9
12.5°	1044.9	1048.4	1044.9	1055.5	1053.1
15°	1027.3	1030.8	1029.7	1041.4	1040.2
17.5°	1006.2	1013.2	1012.1	1022.6	1020.3
20°	982.7	989.7	992.1	1002.7	1003.8
22.5°	958.0	965.1	968.6	982.7	981.5
25°	927.5	939.3	942.8	958.0	958.0
27.5°	898.2	911.1	918.1	931.0	932.2
30°	866.5	881.7	891.1	905.2	905.2
32.5°	831.2	848.9	861.8	877.0	880.6
35°	798.4	817.2	832.4	850.0	854.7
37.5°	763.1	784.3	801.9	821.9	825.4
40°	727.9	749.1	772.5	792.5	797.2
42.5°	689.2	716.2	740.8	763.1	770.2
45°	652.8	681.0	710.3	732.6	742.0
47.5°	614.0	645.7	678.6	703.3	710.3
50°	576.5	609.3	645.7	672.7	681.0
52.5°	536.6	571.8	612.9	641.0	651.6
55°	497.8	536.6	578.8	610.5	619.9
57.5°	460.2	500.2	545.9	577.6	588.2
60°	420.3	462.6	510.7	543.6	556.5
62.5°	382.7	426.2	477.8	510.7	522.5
65°	344.0	389.8	441.5	476.7	488.4
67.5°	305.3	353.4	405.1	443.8	453.2
70°	264.2	314.7	371.0	408.6	420.3
72.5°	226.6	277.1	335.8	374.5	386.3
75°	186.7	241.9	300.6	339.3	353.4
77.5°	152.6	207.8	266.5	307.6	318.2
80°	116.2	173.8	234.8	274.7	286.5
82.5°	84.5	143.2	205.5	245.4	257.1
85°	57.5	116.2	178.5	218.4	230.1
87.5°	35.2	93.9	153.8	193.7	205.5
90°	15.3	72.8	132.7	172.6	184.3
92.5°	14.1	64.6	123.3	162.0	172.6
95°	12.9	58.7	116.2	152.6	164.4
97.5°	11.7	54.0	109.2	144.4	156.2
100°	10.6	48.1	102.1	136.2	147.9
102.5°	9.4	42.3	95.1	128.0	139.7
105°	9.4	37.6	88.1	120.9	131.5
107.5°	8.2	32.9	81.0	112.7	123.3
110°	7.0	28.2	75.1	105.7	115.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	7.0	23.5	68.1	97.4	108.0
115°	5.9	20.0	62.2	90.4	99.8
117.5°	5.9	15.3	55.2	83.4	92.8
120°	4.7	10.6	49.3	76.3	84.5
122.5°	4.7	7.0	43.4	69.3	77.5
125°	3.5	3.5	37.6	62.2	70.4
127.5°	3.5	2.3	31.7	55.2	63.4
130°	3.5	2.3	25.8	48.1	55.2
132.5°	2.3	2.3	20.0	41.1	49.3
135°	2.3	1.2	14.1	35.2	41.1
137.5°	2.3	1.2	9.4	28.2	34.0
140°	1.2	1.2	4.7	22.3	28.2
142.5°	1.2	0.0	0.0	15.3	21.1
145°	1.2	0.0	0.0	9.4	14.1
147.5°	0.0	0.0	0.0	3.5	8.2
150°	0.0	0.0	0.0	0.0	2.3
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	17.98	19.49	18.47	19.97	20.48	19.98	21.48	20.47	21.96	22.48
	3H	19.54	20.91	20.04	21.40	21.96	22.36	23.73	22.86	24.22	24.77
	4H	20.06	21.36	20.58	21.87	22.44	23.47	24.77	23.99	25.28	25.85
	6H	20.40	21.61	20.94	22.13	22.72	24.58	25.79	25.11	26.31	26.89
	8H	20.49	21.65	21.04	22.19	22.79	25.13	26.29	25.68	26.84	27.43
	12H	20.54	21.65	21.09	22.19	22.81	25.74	26.85	26.29	27.39	28.01
4H	2H	18.89	20.19	19.41	20.70	21.27	20.44	21.74	20.96	22.24	22.81
	3H	20.69	21.80	21.23	22.35	22.94	23.03	24.14	23.57	24.69	25.28
	4H	21.35	22.37	21.91	22.93	23.55	24.30	25.31	24.85	25.87	26.49
	6H	21.83	22.72	22.40	23.31	23.94	25.58	26.48	26.16	27.06	27.70
	8H	21.96	22.80	22.54	23.39	24.04	26.23	27.07	26.81	27.66	28.31
	12H	22.05	22.81	22.65	23.43	24.08	26.95	27.71	27.55	28.32	28.98
8H	4H	21.99	22.83	22.57	23.41	24.06	24.52	25.36	25.10	25.95	26.60
	6H	22.64	23.36	23.26	23.98	24.64	25.96	26.68	26.58	27.30	27.96
	8H	22.88	23.52	23.50	24.15	24.82	26.74	27.38	27.37	28.02	28.69
	12H	23.05	23.62	23.67	24.24	24.98	27.62	28.19	28.25	28.82	29.55
12H	4H	22.14	22.91	22.75	23.52	24.17	24.53	25.30	25.14	25.91	26.56
	6H	22.89	23.53	23.51	24.16	24.83	26.00	26.65	26.63	27.28	27.95
	8H	23.21	23.78	23.84	24.41	25.14	26.85	27.42	27.47	28.04	28.78