

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: P242520

Luminaire Tested: S123DRP-S340D940-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242520
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-S340D940-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

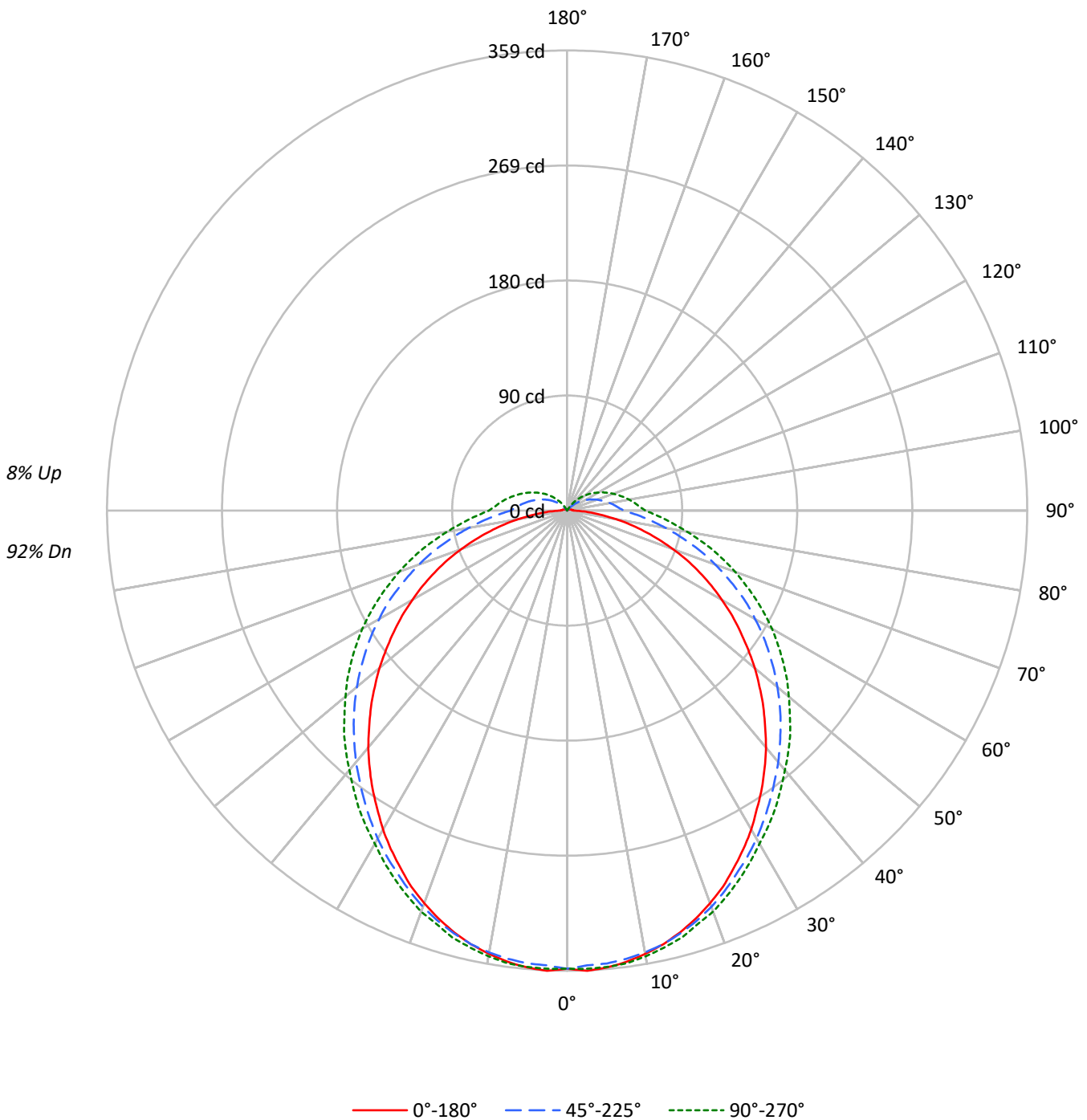
Lumens per Lamp: N/A
Luminaire Lumens: 1201.2 lumens
Efficiency: N/A
Efficacy: 103.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): 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°	4332	4332	4332
5°	4345	4215	4215
10°	4306	4110	4084
15°	4251	3994	3945
20°	4171	3861	3792
25°	4073	3710	3633
30°	3972	3574	3473
35°	3860	3430	3343
40°	3752	3300	3206
45°	3633	3174	3094
50°	3515	3048	2971
55°	3385	2920	2860
60°	3258	2790	2744
65°	3128	2651	2611
70°	2931	2493	2471
75°	2684	2316	2329
80°	2395	2137	2166
85°	2132	2002	2058

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3633 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	33.9	2.8
10°-20°	96.7	8.0
20°-30°	144.5	12.0
30°-40°	172.6	14.4
40°-50°	180.6	15.0
50°-60°	169.4	14.1
60°-70°	141.5	11.8
70°-80°	101.2	8.4
80°-90°	60.2	5.0
90°-100°	37.8	3.1
100°-110°	27.8	2.3
110°-120°	18.6	1.5
120°-130°	10.6	0.9
130°-140°	4.8	0.4
140°-150°	1.0	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	275.1	22.9
0°-40°	447.7	37.3
0°-60°	797.7	66.4
0°-90°	1100.6	91.6
90°-120°	84.2	7.0
90°-150°	100.6	8.4
90°-180°	101.0	8.4
0°-180°	1201.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	357	357	357	357	357	
5°	358	357	355	358	357	34
15°	341	342	342	345	345	96
25°	308	312	313	318	318	142
35°	265	271	276	282	283	166
45°	216	226	236	243	246	167
55°	165	178	192	202	206	148
65°	114	129	146	158	162	113
75°	62	80	100	112	117	66
85°	19	38	59	72	76	20
90°	5	24	44	57	61	4
95°	4	20	38	51	54	3
105°	3	12	29	40	44	3
115°	2	7	21	30	33	2
125°	1	1	12	21	23	1
135°	1	0	5	12	14	1
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°	357.4	357.4	357.4	357.4	357.4
2.5°	359.4	358.2	355.1	358.2	357.8
5°	357.8	357.0	354.7	357.8	357.4
7.5°	355.1	355.1	352.7	356.6	356.2
10°	351.2	352.0	350.0	353.9	353.1
12.5°	346.5	347.7	346.5	350.0	349.2
15°	340.7	341.8	341.5	345.3	345.0
17.5°	333.7	336.0	335.6	339.1	338.3
20°	325.9	328.2	329.0	332.5	332.9
22.5°	317.7	320.0	321.2	325.9	325.5
25°	307.6	311.5	312.6	317.7	317.7
27.5°	297.8	302.1	304.5	308.7	309.1
30°	287.3	292.4	295.5	300.2	300.2
32.5°	275.7	281.5	285.8	290.8	292.0
35°	264.8	271.0	276.0	281.9	283.4
37.5°	253.1	260.1	265.9	272.5	273.7
40°	241.4	248.4	256.2	262.8	264.4
42.5°	228.5	237.5	245.7	253.1	255.4
45°	216.5	225.8	235.6	242.9	246.1
47.5°	203.6	214.1	225.0	233.2	235.6
50°	191.2	202.1	214.1	223.1	225.8
52.5°	177.9	189.6	203.2	212.6	216.1
55°	165.1	177.9	191.9	202.5	205.6
57.5°	152.6	165.9	181.0	191.6	195.1
60°	139.4	153.4	169.4	180.3	184.5
62.5°	126.9	141.3	158.5	169.4	173.3
65°	114.1	129.3	146.4	158.1	162.0
67.5°	101.2	117.2	134.3	147.2	150.3
70°	87.6	104.3	123.0	135.5	139.4
72.5°	75.1	91.9	111.4	124.2	128.1
75°	61.9	80.2	99.7	112.5	117.2
77.5°	50.6	68.9	88.4	102.0	105.5
80°	38.5	57.6	77.9	91.1	95.0
82.5°	28.0	47.5	68.1	81.4	85.3
85°	19.1	38.5	59.2	72.4	76.3
87.5°	11.7	31.1	51.0	64.2	68.1
90°	5.1	24.1	44.0	57.2	61.1
92.5°	4.7	21.4	40.9	53.7	57.2
95°	4.3	19.5	38.5	50.6	54.5
97.5°	3.9	17.9	36.2	47.9	51.8
100°	3.5	16.0	33.9	45.2	49.1
102.5°	3.1	14.0	31.5	42.4	46.3
105°	3.1	12.5	29.2	40.1	43.6
107.5°	2.7	10.9	26.9	37.4	40.9
110°	2.3	9.3	24.9	35.0	38.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.3	7.8	22.6	32.3	35.8
115°	1.9	6.6	20.6	30.0	33.1
117.5°	1.9	5.1	18.3	27.6	30.8
120°	1.6	3.5	16.4	25.3	28.0
122.5°	1.6	2.3	14.4	23.0	25.7
125°	1.2	1.2	12.5	20.6	23.4
127.5°	1.2	0.8	10.5	18.3	21.0
130°	1.2	0.8	8.6	16.0	18.3
132.5°	0.8	0.8	6.6	13.6	16.4
135°	0.8	0.4	4.7	11.7	13.6
137.5°	0.8	0.4	3.1	9.3	11.3
140°	0.4	0.4	1.6	7.4	9.3
142.5°	0.4	0.0	0.0	5.1	7.0
145°	0.4	0.0	0.0	3.1	4.7
147.5°	0.0	0.0	0.0	1.2	2.7
150°	0.0	0.0	0.0	0.0	0.8
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	14.15	15.65	14.64	16.13	16.65	16.14	17.65	16.63	18.13	18.65
	3H	15.70	17.07	16.20	17.57	18.12	18.52	19.89	19.02	20.38	20.94
	4H	16.22	17.52	16.75	18.03	18.60	19.63	20.93	20.16	21.44	22.01
	6H	16.57	17.78	17.10	18.30	18.88	20.74	21.95	21.28	22.47	23.06
	8H	16.66	17.81	17.20	18.36	18.95	21.30	22.46	21.85	23.00	23.59
	12H	16.70	17.82	17.26	18.35	18.97	21.90	23.01	22.46	23.55	24.17
4H	2H	15.05	16.35	15.58	16.86	17.43	16.60	17.90	17.13	18.41	18.98
	3H	16.85	17.96	17.39	18.51	19.10	19.20	20.30	19.73	20.85	21.45
	4H	17.52	18.53	18.07	19.09	19.71	20.46	21.48	21.02	22.04	22.66
	6H	17.99	18.89	18.57	19.47	20.11	21.75	22.64	22.32	23.23	23.86
	8H	18.13	18.97	18.71	19.55	20.20	22.40	23.24	22.98	23.82	24.47
	12H	18.21	18.98	18.82	19.59	20.24	23.11	23.88	23.72	24.49	25.14
8H	4H	18.15	18.99	18.73	19.58	20.23	20.69	21.53	21.27	22.11	22.76
	6H	18.81	19.52	19.42	20.15	20.80	22.13	22.84	22.74	23.47	24.12
	8H	19.04	19.68	19.67	20.32	20.99	22.91	23.55	23.53	24.18	24.85
	12H	19.21	19.78	19.84	20.41	21.14	23.79	24.36	24.42	24.99	25.72
12H	4H	18.31	19.07	18.91	19.68	20.34	20.70	21.46	21.30	22.08	22.73
	6H	19.05	19.69	19.67	20.33	21.00	22.17	22.81	22.79	23.45	24.12
	8H	19.37	19.95	20.00	20.57	21.30	23.01	23.58	23.64	24.21	24.94