

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: P242505

Luminaire Tested: S123DRP-S340D840-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242505
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-S340D840-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

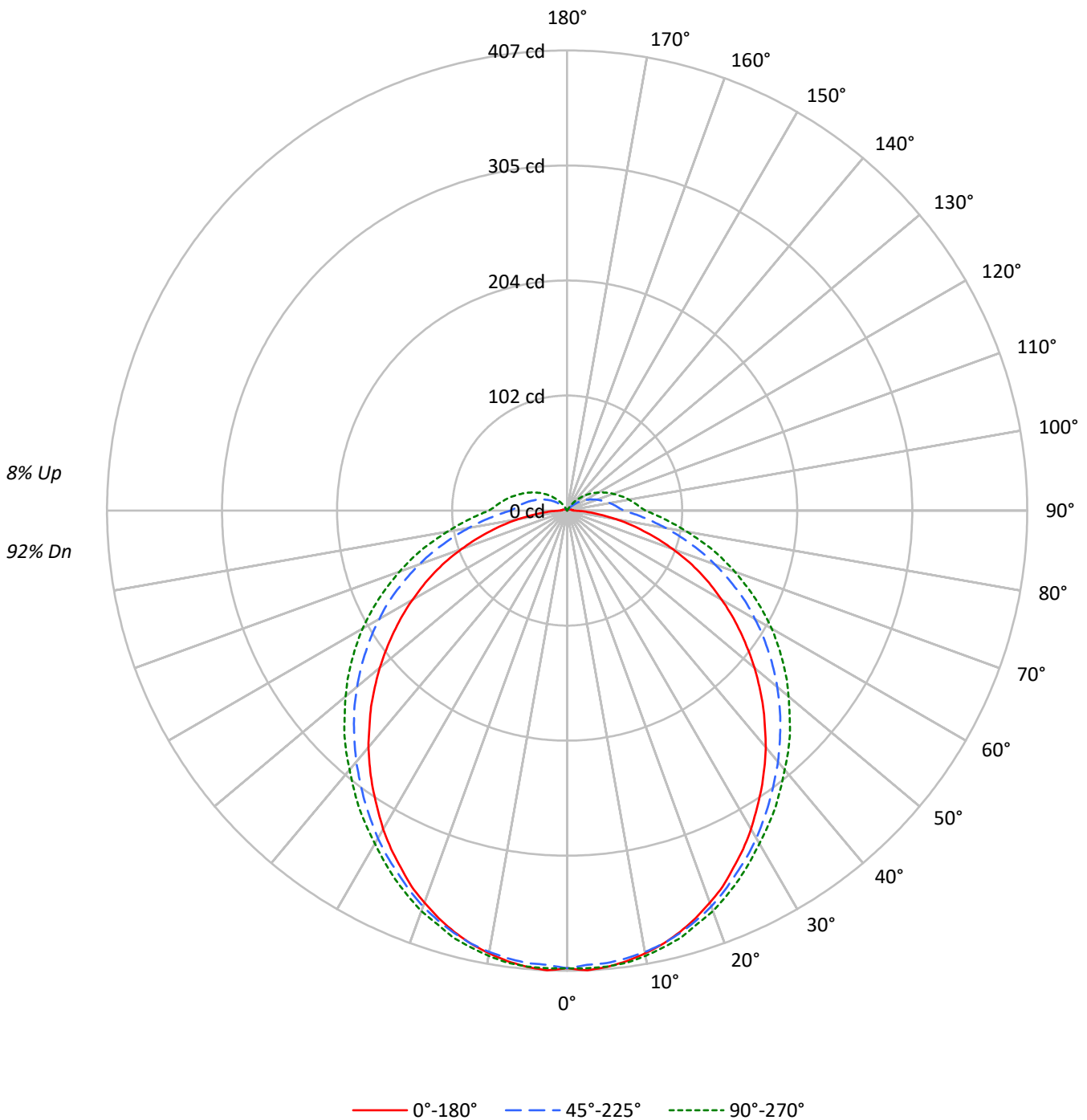
Lumens per Lamp: N/A
Luminaire Lumens: 1360.4 lumens
Efficiency: N/A
Efficacy: 117.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

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

TEST NUMBER: P242505

CATALOG NUMBER: S123DRP-S340D840-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°	4907	4907	4907
5°	4921	4774	4774
10°	4876	4655	4625
15°	4814	4523	4468
20°	4724	4373	4295
25°	4612	4202	4114
30°	4499	4048	3933
35°	4370	3885	3786
40°	4249	3736	3630
45°	4115	3595	3504
50°	3981	3452	3364
55°	3834	3308	3238
60°	3690	3159	3109
65°	3542	3002	2955
70°	3320	2824	2799
75°	3039	2622	2637
80°	2719	2420	2453
85°	2411	2266	2330

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4115 cd/sqm



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CATALOG NUMBER: S123DRP-S340D840-X4F0-XX-UDD-D-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.4	2.8
10°-20°	109.5	8.0
20°-30°	163.7	12.0
30°-40°	195.4	14.4
40°-50°	204.5	15.0
50°-60°	191.9	14.1
60°-70°	160.3	11.8
70°-80°	114.6	8.4
80°-90°	68.2	5.0
90°-100°	42.8	3.1
100°-110°	31.5	2.3
110°-120°	21.0	1.5
120°-130°	12.0	0.9
130°-140°	5.4	0.4
140°-150°	1.1	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	311.6	22.9
0°-40°	507.0	37.3
0°-60°	903.4	66.4
0°-90°	1246.5	91.6
90°-120°	95.4	7.0
90°-150°	113.9	8.4
90°-180°	114.0	8.4
0°-180°	1360.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	405	405	405	405	405	
5°	405	404	402	405	405	38
15°	386	387	387	391	391	109
25°	348	353	354	360	360	161
35°	300	307	313	319	321	188
45°	245	256	267	275	279	189
55°	187	202	217	229	233	167
65°	129	146	166	179	183	128
75°	70	91	113	127	133	75
85°	22	44	67	82	86	22
90°	6	27	50	65	69	4
95°	5	22	44	57	62	4
105°	4	14	33	45	49	4
115°	2	8	23	34	38	2
125°	1	1	14	23	26	1
135°	1	0	5	13	15	1
145°	0	0	0	4	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°	404.8	404.8	404.8	404.8	404.8
2.5°	407.0	405.7	402.1	405.7	405.2
5°	405.2	404.3	401.7	405.2	404.8
7.5°	402.1	402.1	399.5	403.9	403.5
10°	397.7	398.6	396.4	400.8	399.9
12.5°	392.4	393.8	392.4	396.4	395.5
15°	385.8	387.1	386.7	391.1	390.7
17.5°	377.9	380.5	380.1	384.1	383.2
20°	369.1	371.7	372.6	376.6	377.0
22.5°	359.8	362.4	363.8	369.1	368.6
25°	348.3	352.7	354.1	359.8	359.8
27.5°	337.3	342.2	344.8	349.7	350.1
30°	325.4	331.1	334.7	340.0	340.0
32.5°	312.2	318.8	323.6	329.4	330.7
35°	299.8	306.9	312.6	319.2	321.0
37.5°	286.6	294.5	301.2	308.7	310.0
40°	273.4	281.3	290.1	297.6	299.4
42.5°	258.8	269.0	278.2	286.6	289.3
45°	245.2	255.7	266.8	275.1	278.7
47.5°	230.6	242.5	254.9	264.1	266.8
50°	216.5	228.8	242.5	252.7	255.7
52.5°	201.5	214.7	230.2	240.7	244.7
55°	187.0	201.5	217.4	229.3	232.8
57.5°	172.8	187.8	205.0	216.9	220.9
60°	157.9	173.7	191.8	204.2	209.0
62.5°	143.7	160.1	179.5	191.8	196.2
65°	129.2	146.4	165.8	179.0	183.4
67.5°	114.6	132.7	152.1	166.7	170.2
70°	99.2	118.2	139.3	153.4	157.9
72.5°	85.1	104.1	126.1	140.7	145.1
75°	70.1	90.8	112.9	127.4	132.7
77.5°	57.3	78.0	100.1	115.5	119.5
80°	43.7	65.3	88.2	103.2	107.6
82.5°	31.7	53.8	77.2	92.2	96.6
85°	21.6	43.7	67.0	82.0	86.4
87.5°	13.2	35.3	57.8	72.8	77.2
90°	5.7	27.3	49.8	64.8	69.2
92.5°	5.3	24.3	46.3	60.8	64.8
95°	4.9	22.0	43.7	57.3	61.7
97.5°	4.4	20.3	41.0	54.2	58.6
100°	4.0	18.1	38.4	51.1	55.6
102.5°	3.5	15.9	35.7	48.1	52.5
105°	3.5	14.1	33.1	45.4	49.4
107.5°	3.1	12.3	30.4	42.3	46.3
110°	2.6	10.6	28.2	39.7	43.2



TEST NUMBER: P242505

CATALOG NUMBER: S123DRP-S340D840-X4F0-XX-UDD-D-W

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.6	8.8	25.6	36.6	40.6
115°	2.2	7.5	23.4	34.0	37.5
117.5°	2.2	5.7	20.7	31.3	34.8
120°	1.8	4.0	18.5	28.7	31.7
122.5°	1.8	2.6	16.3	26.0	29.1
125°	1.3	1.3	14.1	23.4	26.5
127.5°	1.3	0.9	11.9	20.7	23.8
130°	1.3	0.9	9.7	18.1	20.7
132.5°	0.9	0.9	7.5	15.4	18.5
135°	0.9	0.4	5.3	13.2	15.4
137.5°	0.9	0.4	3.5	10.6	12.8
140°	0.4	0.4	1.8	8.4	10.6
142.5°	0.4	0.0	0.0	5.7	7.9
145°	0.4	0.0	0.0	3.5	5.3
147.5°	0.0	0.0	0.0	1.3	3.1
150°	0.0	0.0	0.0	0.0	0.9
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	14.58	16.08	15.07	16.56	17.08	16.57	18.08	17.06	18.56	19.08
	3H	16.13	17.51	16.64	18.00	18.55	18.95	20.32	19.45	20.82	21.37
	4H	16.66	17.96	17.18	18.46	19.03	20.07	21.37	20.59	21.87	22.44
	6H	17.00	18.21	17.54	18.73	19.32	21.17	22.38	21.71	22.90	23.49
	8H	17.09	18.25	17.64	18.79	19.38	21.73	22.89	22.28	23.43	24.02
	12H	17.14	18.25	17.69	18.79	19.41	22.34	23.45	22.89	23.98	24.61
4H	2H	15.48	16.78	16.01	17.29	17.86	17.03	18.33	17.56	18.84	19.41
	3H	17.29	18.39	17.82	18.94	19.54	19.63	20.73	20.16	21.28	21.88
	4H	17.95	18.96	18.51	19.52	20.15	20.90	21.91	21.45	22.47	23.09
	6H	18.42	19.32	19.00	19.90	20.54	22.18	23.07	22.75	23.66	24.30
	8H	18.56	19.40	19.14	19.99	20.64	22.83	23.67	23.41	24.26	24.91
	12H	18.65	19.41	19.25	20.02	20.68	23.55	24.31	24.15	24.92	25.58
8H	4H	18.58	19.42	19.17	20.01	20.66	21.12	21.96	21.70	22.55	23.20
	6H	19.24	19.95	19.85	20.58	21.23	22.56	23.27	23.17	23.90	24.56
	8H	19.47	20.12	20.10	20.75	21.42	23.34	23.98	23.96	24.62	25.28
	12H	19.65	20.22	20.27	20.84	21.58	24.22	24.79	24.85	25.42	26.15
12H	4H	18.74	19.50	19.34	20.11	20.77	21.13	21.89	21.73	22.51	23.16
	6H	19.48	20.13	20.11	20.76	21.43	22.60	23.24	23.23	23.88	24.55
	8H	19.81	20.38	20.43	21.00	21.74	23.45	24.02	24.07	24.64	25.38