

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: P242501

Luminaire Tested: S123DRP-S340D835-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242501
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-S340D835-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

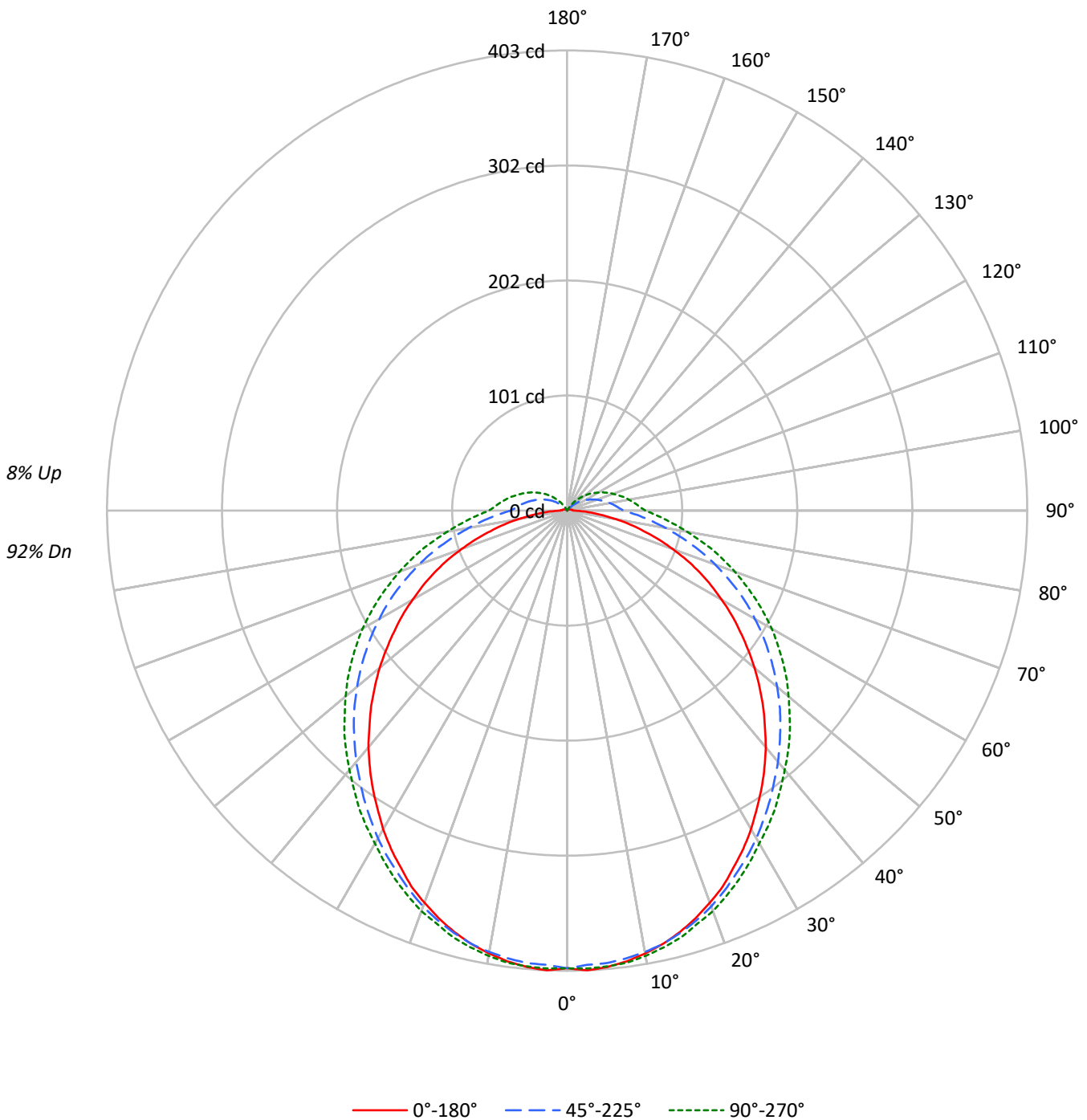
Lumens per Lamp: N/A
Luminaire Lumens: 1347.0 lumens
Efficiency: N/A
Efficacy: 116.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 11.6
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°	4858	4858	4858
5°	4874	4728	4726
10°	4829	4610	4580
15°	4766	4478	4423
20°	4678	4329	4252
25°	4567	4161	4074
30°	4454	4008	3894
35°	4328	3848	3749
40°	4207	3700	3595
45°	4074	3560	3468
50°	3942	3418	3331
55°	3795	3276	3206
60°	3653	3128	3079
65°	3507	2973	2926
70°	3286	2798	2771
75°	3009	2597	2611
80°	2688	2395	2428
85°	2389	2245	2309

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4074 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.0	2.8
10°-20°	108.4	8.0
20°-30°	162.1	12.0
30°-40°	193.5	14.4
40°-50°	202.5	15.0
50°-60°	190.0	14.1
60°-70°	158.7	11.8
70°-80°	113.5	8.4
80°-90°	67.5	5.0
90°-100°	42.4	3.1
100°-110°	31.2	2.3
110°-120°	20.8	1.5
120°-130°	11.9	0.9
130°-140°	5.3	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°	308.5	22.9
0°-40°	502.0	37.3
0°-60°	894.5	66.4
0°-90°	1234.3	91.6
90°-120°	94.4	7.0
90°-150°	112.8	8.4
90°-180°	113.0	8.4
0°-180°	1347.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	401	401	401	401	401	
5°	401	400	398	401	401	38
15°	382	383	383	387	387	108
25°	345	349	351	356	356	159
35°	297	304	310	316	318	186
45°	243	253	264	272	276	187
55°	185	200	215	227	230	166
65°	128	145	164	177	182	126
75°	69	90	112	126	131	74
85°	21	43	66	81	86	22
90°	6	27	49	64	68	4
95°	5	22	43	57	61	4
105°	4	14	33	45	49	4
115°	2	7	23	34	37	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°	400.8	400.8	400.8	400.8	400.8
2.5°	403.0	401.7	398.2	401.7	401.3
5°	401.3	400.4	397.8	401.3	400.8
7.5°	398.2	398.2	395.6	399.9	399.5
10°	393.8	394.7	392.5	396.9	396.0
12.5°	388.6	389.9	388.6	392.5	391.7
15°	382.0	383.4	382.9	387.3	386.8
17.5°	374.2	376.8	376.4	380.3	379.4
20°	365.5	368.1	368.9	372.9	373.3
22.5°	356.3	358.9	360.2	365.5	365.0
25°	344.9	349.3	350.6	356.3	356.3
27.5°	334.0	338.8	341.4	346.2	346.7
30°	322.2	327.9	331.4	336.6	336.6
32.5°	309.1	315.7	320.5	326.2	327.5
35°	296.9	303.9	309.6	316.1	317.9
37.5°	283.8	291.7	298.2	305.6	306.9
40°	270.7	278.6	287.3	294.7	296.5
42.5°	256.3	266.3	275.5	283.8	286.4
45°	242.8	253.2	264.2	272.5	275.9
47.5°	228.4	240.1	252.4	261.5	264.2
50°	214.4	226.6	240.1	250.2	253.2
52.5°	199.5	212.6	227.9	238.4	242.3
55°	185.1	199.5	215.3	227.0	230.5
57.5°	171.2	186.0	203.0	214.8	218.7
60°	156.3	172.0	189.9	202.2	207.0
62.5°	142.3	158.5	177.7	189.9	194.3
65°	127.9	145.0	164.2	177.3	181.6
67.5°	113.5	131.4	150.6	165.0	168.5
70°	98.2	117.0	138.0	151.9	156.3
72.5°	84.3	103.0	124.9	139.3	143.6
75°	69.4	89.9	111.8	126.2	131.4
77.5°	56.8	77.3	99.1	114.4	118.3
80°	43.2	64.6	87.3	102.2	106.5
82.5°	31.4	53.3	76.4	91.3	95.6
85°	21.4	43.2	66.4	81.2	85.6
87.5°	13.1	34.9	57.2	72.0	76.4
90°	5.7	27.1	49.3	64.2	68.5
92.5°	5.2	24.0	45.8	60.3	64.2
95°	4.8	21.8	43.2	56.8	61.1
97.5°	4.4	20.1	40.6	53.7	58.1
100°	3.9	17.9	38.0	50.6	55.0
102.5°	3.5	15.7	35.4	47.6	52.0
105°	3.5	14.0	32.7	45.0	48.9
107.5°	3.1	12.2	30.1	41.9	45.8
110°	2.6	10.5	27.9	39.3	42.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.6	8.7	25.3	36.2	40.2
115°	2.2	7.4	23.1	33.6	37.1
117.5°	2.2	5.7	20.5	31.0	34.5
120°	1.7	3.9	18.3	28.4	31.4
122.5°	1.7	2.6	16.2	25.8	28.8
125°	1.3	1.3	14.0	23.1	26.2
127.5°	1.3	0.9	11.8	20.5	23.6
130°	1.3	0.9	9.6	17.9	20.5
132.5°	0.9	0.9	7.4	15.3	18.3
135°	0.9	0.4	5.2	13.1	15.3
137.5°	0.9	0.4	3.5	10.5	12.7
140°	0.4	0.4	1.7	8.3	10.5
142.5°	0.4	0.0	0.0	5.7	7.9
145°	0.4	0.0	0.0	3.5	5.2
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	14.54	16.05	15.03	16.53	17.05	16.54	18.05	17.03	18.53	19.04
	3H	16.10	17.47	16.60	17.96	18.52	18.92	20.29	19.42	20.78	21.34
	4H	16.62	17.92	17.14	18.43	19.00	20.03	21.33	20.55	21.84	22.41
	6H	16.97	18.18	17.50	18.70	19.28	21.14	22.35	21.67	22.87	23.46
	8H	17.05	18.21	17.60	18.76	19.35	21.69	22.85	22.24	23.40	23.99
	12H	17.10	18.21	17.66	18.75	19.37	22.30	23.41	22.85	23.95	24.57
4H	2H	15.45	16.75	15.97	17.26	17.83	17.00	18.30	17.52	18.81	19.38
	3H	17.25	18.36	17.79	18.91	19.50	19.59	20.70	20.13	21.25	21.84
	4H	17.92	18.93	18.47	19.49	20.11	20.86	21.87	21.42	22.43	23.06
	6H	18.39	19.28	18.97	19.87	20.51	22.14	23.04	22.72	23.62	24.26
	8H	18.53	19.37	19.11	19.95	20.60	22.79	23.64	23.38	24.22	24.87
	12H	18.61	19.38	19.21	19.99	20.64	23.51	24.27	24.11	24.89	25.54
8H	4H	18.55	19.39	19.13	19.98	20.63	21.09	21.93	21.67	22.51	23.16
	6H	19.21	19.92	19.82	20.55	21.20	22.53	23.24	23.14	23.87	24.52
	8H	19.44	20.08	20.06	20.72	21.39	23.30	23.95	23.93	24.58	25.25
	12H	19.61	20.18	20.24	20.81	21.54	24.19	24.76	24.81	25.38	26.12
12H	4H	18.71	19.47	19.31	20.08	20.74	21.10	21.86	21.70	22.47	23.13
	6H	19.45	20.09	20.07	20.73	21.40	22.57	23.21	23.19	23.85	24.51
	8H	19.77	20.34	20.40	20.97	21.70	23.41	23.98	24.04	24.61	25.34