

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: P242496

Luminaire Tested: S123DRP-S340D830-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242496
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-S340D830-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

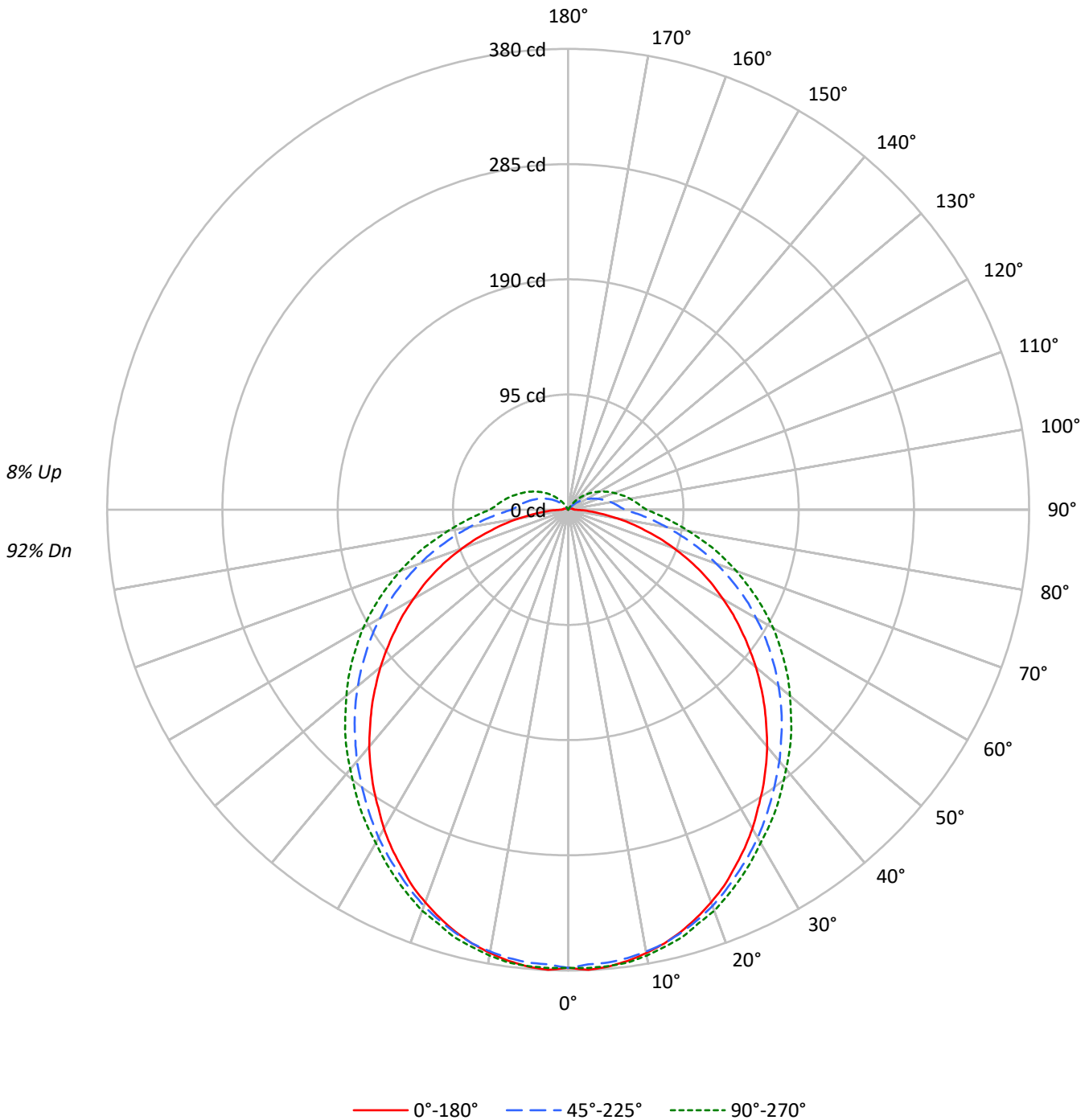
Lumens per Lamp: N/A
Luminaire Lumens: 1269.6 lumens
Efficiency: N/A
Efficacy: 109.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

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°	4579	4579	4579
5°	4593	4455	4455
10°	4552	4345	4318
15°	4493	4221	4169
20°	4409	4081	4009
25°	4305	3922	3840
30°	4199	3778	3670
35°	4079	3626	3534
40°	3966	3488	3387
45°	3840	3355	3270
50°	3716	3222	3140
55°	3578	3087	3023
60°	3443	2949	2902
65°	3306	2801	2759
70°	3099	2635	2611
75°	2835	2448	2462
80°	2532	2258	2289
85°	2255	2117	2177

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3840 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.8	2.8
10°-20°	102.2	8.0
20°-30°	152.8	12.0
30°-40°	182.4	14.4
40°-50°	190.9	15.0
50°-60°	179.1	14.1
60°-70°	149.6	11.8
70°-80°	107.0	8.4
80°-90°	63.6	5.0
90°-100°	40.0	3.1
100°-110°	29.4	2.3
110°-120°	19.6	1.5
120°-130°	11.2	0.9
130°-140°	5.0	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°	290.8	22.9
0°-40°	473.2	37.3
0°-60°	843.2	66.4
0°-90°	1163.3	91.6
90°-120°	89.0	7.0
90°-150°	106.3	8.4
90°-180°	106.0	8.3
0°-180°	1269.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	378	378	378	378	378	
5°	378	377	375	378	378	36
15°	360	361	361	365	365	101
25°	325	329	330	336	336	150
35°	280	286	292	298	300	175
45°	229	239	249	257	260	176
55°	174	188	203	214	217	156
65°	121	137	155	167	171	119
75°	65	85	105	119	124	70
85°	20	41	63	76	81	21
90°	5	26	46	60	65	4
95°	4	21	41	54	58	4
105°	3	13	31	42	46	3
115°	2	7	22	32	35	2
125°	1	1	13	22	25	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°	377.8	377.8	377.8	377.8	377.8
2.5°	379.8	378.6	375.3	378.6	378.2
5°	378.2	377.4	374.9	378.2	377.8
7.5°	375.3	375.3	372.9	377.0	376.6
10°	371.2	372.0	370.0	374.1	373.3
12.5°	366.3	367.5	366.3	370.0	369.1
15°	360.1	361.3	360.9	365.0	364.6
17.5°	352.7	355.2	354.7	358.4	357.6
20°	344.5	346.9	347.7	351.5	351.9
22.5°	335.8	338.3	339.5	344.5	344.0
25°	325.1	329.2	330.5	335.8	335.8
27.5°	314.8	319.4	321.8	326.3	326.8
30°	303.7	309.1	312.4	317.3	317.3
32.5°	291.4	297.5	302.1	307.4	308.7
35°	279.8	286.4	291.8	298.0	299.6
37.5°	267.5	274.9	281.1	288.1	289.3
40°	255.2	262.6	270.8	277.8	279.4
42.5°	241.6	251.0	259.7	267.5	270.0
45°	228.8	238.7	249.0	256.8	260.1
47.5°	215.2	226.3	237.9	246.5	249.0
50°	202.1	213.6	226.3	235.8	238.7
52.5°	188.1	200.4	214.8	224.7	228.4
55°	174.5	188.1	202.9	214.0	217.3
57.5°	161.3	175.3	191.4	202.5	206.2
60°	147.3	162.1	179.0	190.5	195.1
62.5°	134.2	149.4	167.5	179.0	183.1
65°	120.6	136.6	154.7	167.1	171.2
67.5°	107.0	123.9	142.0	155.6	158.9
70°	92.6	110.3	130.0	143.2	147.3
72.5°	79.4	97.1	117.7	131.3	135.4
75°	65.4	84.8	105.4	118.9	123.9
77.5°	53.5	72.8	93.4	107.8	111.5
80°	40.7	60.9	82.3	96.3	100.4
82.5°	29.6	50.2	72.0	86.0	90.1
85°	20.2	40.7	62.6	76.5	80.7
87.5°	12.3	32.9	53.9	67.9	72.0
90°	5.3	25.5	46.5	60.5	64.6
92.5°	4.9	22.6	43.2	56.8	60.5
95°	4.5	20.6	40.7	53.5	57.6
97.5°	4.1	18.9	38.3	50.6	54.7
100°	3.7	16.9	35.8	47.7	51.9
102.5°	3.3	14.8	33.3	44.9	49.0
105°	3.3	13.2	30.9	42.4	46.1
107.5°	2.9	11.5	28.4	39.5	43.2
110°	2.5	9.9	26.3	37.0	40.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.5	8.2	23.9	34.2	37.9
115°	2.1	7.0	21.8	31.7	35.0
117.5°	2.1	5.3	19.3	29.2	32.5
120°	1.6	3.7	17.3	26.7	29.6
122.5°	1.6	2.5	15.2	24.3	27.2
125°	1.2	1.2	13.2	21.8	24.7
127.5°	1.2	0.8	11.1	19.3	22.2
130°	1.2	0.8	9.1	16.9	19.3
132.5°	0.8	0.8	7.0	14.4	17.3
135°	0.8	0.4	4.9	12.3	14.4
137.5°	0.8	0.4	3.3	9.9	11.9
140°	0.4	0.4	1.6	7.8	9.9
142.5°	0.4	0.0	0.0	5.3	7.4
145°	0.4	0.0	0.0	3.3	4.9
147.5°	0.0	0.0	0.0	1.2	2.9
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	14.34	15.84	14.83	16.32	16.84	16.34	17.84	16.83	18.32	18.84
	3H	15.90	17.27	16.40	17.76	18.31	18.71	20.09	19.22	20.58	21.13
	4H	16.42	17.72	16.94	18.22	18.79	19.83	21.13	20.35	21.63	22.20
	6H	16.76	17.97	17.30	18.49	19.08	20.93	22.14	21.47	22.66	23.25
	8H	16.85	18.01	17.40	18.55	19.14	21.49	22.65	22.04	23.19	23.78
	12H	16.90	18.01	17.45	18.55	19.17	22.10	23.21	22.65	23.74	24.37
4H	2H	15.24	16.54	15.77	17.05	17.62	16.79	18.09	17.32	18.60	19.17
	3H	17.05	18.15	17.58	18.70	19.30	19.39	20.50	19.92	21.05	21.64
	4H	17.71	18.72	18.27	19.28	19.91	20.66	21.67	21.21	22.23	22.85
	6H	18.19	19.08	18.76	19.66	20.30	21.94	22.83	22.51	23.42	24.06
	8H	18.32	19.16	18.90	19.75	20.40	22.59	23.43	23.17	24.01	24.66
	12H	18.41	19.17	19.01	19.78	20.44	23.31	24.07	23.91	24.68	25.34
8H	4H	18.35	19.19	18.93	19.77	20.42	20.88	21.72	21.46	22.31	22.96
	6H	19.00	19.71	19.61	20.34	20.99	22.32	23.03	22.93	23.66	24.32
	8H	19.23	19.88	19.86	20.51	21.18	23.10	23.74	23.72	24.38	25.04
	12H	19.40	19.98	20.03	20.60	21.34	23.98	24.55	24.61	25.18	25.91
12H	4H	18.50	19.26	19.10	19.88	20.53	20.89	21.66	21.49	22.27	22.92
	6H	19.24	19.89	19.87	20.52	21.19	22.36	23.01	22.99	23.64	24.31
	8H	19.57	20.14	20.19	20.76	21.50	23.20	23.78	23.83	24.40	25.14