

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: P242515

Luminaire Tested: S123DRP-S340D935-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242515
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-S340D935-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

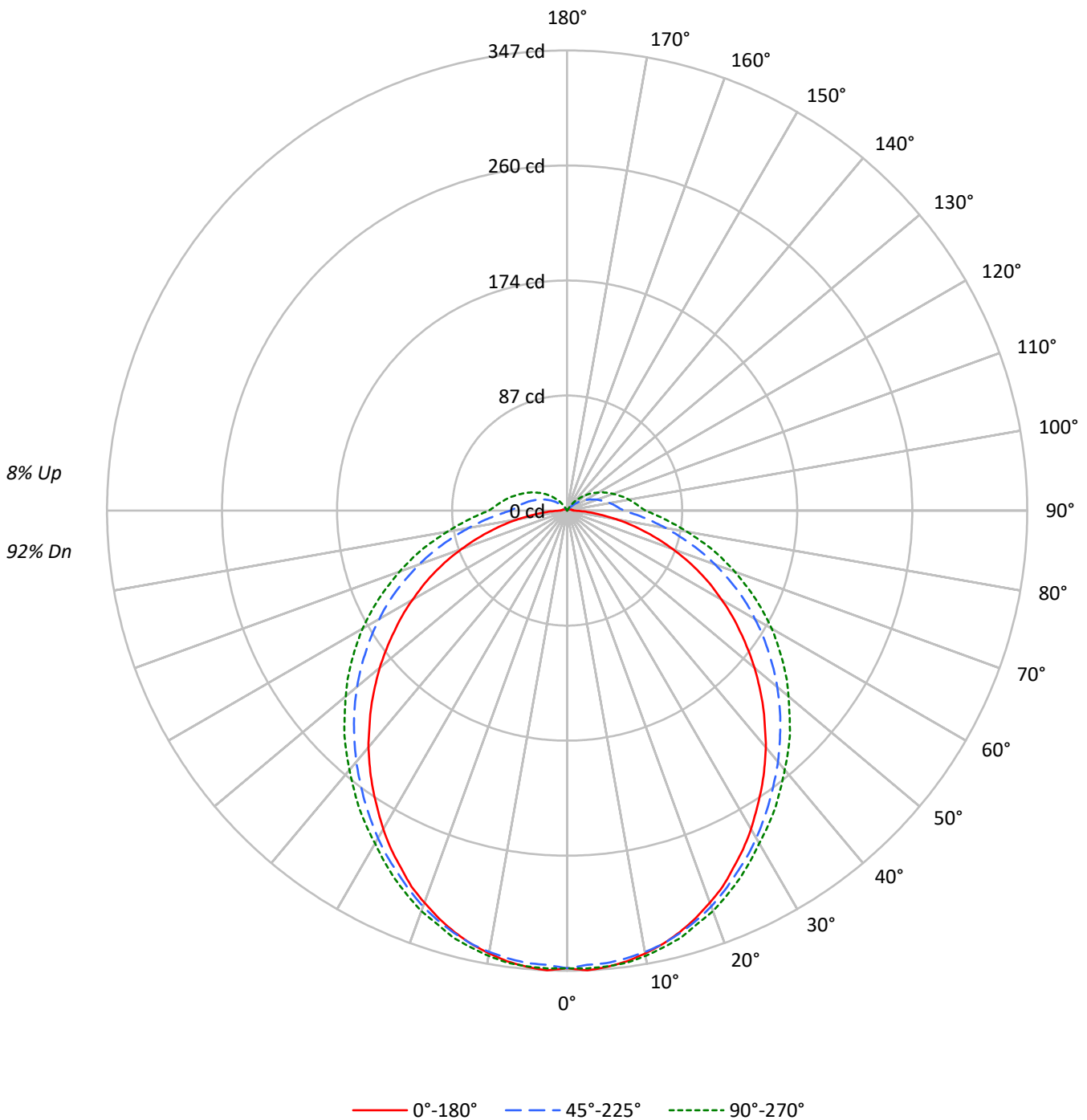
Lumens per Lamp: N/A
Luminaire Lumens: 1159.8 lumens
Efficiency: N/A
Efficacy: 100.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

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°	4183	4183	4183
5°	4196	4070	4070
10°	4158	3970	3944
15°	4104	3856	3809
20°	4028	3728	3661
25°	3933	3583	3508
30°	3835	3451	3352
35°	3726	3312	3228
40°	3623	3187	3095
45°	3507	3064	2987
50°	3394	2944	2868
55°	3268	2819	2761
60°	3146	2693	2651
65°	3019	2560	2520
70°	2831	2408	2386
75°	2593	2234	2249
80°	2314	2063	2090
85°	2054	1931	1988

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3507 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.7	2.8
10°-20°	93.3	8.0
20°-30°	139.6	12.0
30°-40°	166.6	14.4
40°-50°	174.3	15.0
50°-60°	163.6	14.1
60°-70°	136.7	11.8
70°-80°	97.7	8.4
80°-90°	58.1	5.0
90°-100°	36.5	3.2
100°-110°	26.8	2.3
110°-120°	17.9	1.5
120°-130°	10.2	0.9
130°-140°	4.6	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°	265.6	22.9
0°-40°	432.3	37.3
0°-60°	770.2	66.4
0°-90°	1062.7	91.6
90°-120°	81.3	7.0
90°-150°	97.1	8.4
90°-180°	97.0	8.4
0°-180°	1159.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	345	345	345	345	345	
5°	346	345	342	346	345	33
15°	329	330	330	334	333	93
25°	297	301	302	307	307	137
35°	256	262	266	272	274	160
45°	209	218	227	235	238	161
55°	159	172	185	196	198	143
65°	110	125	141	153	156	109
75°	60	77	96	109	113	64
85°	18	37	57	70	74	19
90°	5	23	42	55	59	4
95°	4	19	37	49	53	3
105°	3	12	28	39	42	3
115°	2	6	20	29	32	2
125°	1	1	12	20	23	1
135°	1	0	4	11	13	1
145°	0	0	0	3	4	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°	345.1	345.1	345.1	345.1	345.1
2.5°	347.0	345.9	342.9	345.9	345.5
5°	345.5	344.7	342.5	345.5	345.1
7.5°	342.9	342.9	340.6	344.4	344.0
10°	339.1	339.8	338.0	341.7	341.0
12.5°	334.6	335.7	334.6	338.0	337.2
15°	328.9	330.1	329.7	333.5	333.1
17.5°	322.2	324.4	324.1	327.4	326.7
20°	314.7	316.9	317.7	321.0	321.4
22.5°	306.8	309.0	310.1	314.7	314.3
25°	297.0	300.7	301.9	306.8	306.8
27.5°	287.6	291.7	294.0	298.1	298.5
30°	277.4	282.3	285.3	289.8	289.8
32.5°	266.2	271.8	275.9	280.8	281.9
35°	255.6	261.6	266.5	272.2	273.7
37.5°	244.4	251.1	256.8	263.2	264.3
40°	233.1	239.8	247.4	253.8	255.3
42.5°	220.7	229.3	237.2	244.4	246.6
45°	209.0	218.0	227.4	234.6	237.6
47.5°	196.6	206.8	217.3	225.2	227.4
50°	184.6	195.1	206.8	215.4	218.0
52.5°	171.8	183.1	196.2	205.3	208.6
55°	159.4	171.8	185.3	195.5	198.5
57.5°	147.4	160.1	174.8	185.0	188.3
60°	134.6	148.1	163.5	174.1	178.2
62.5°	122.6	136.5	153.0	163.5	167.3
65°	110.1	124.8	141.4	152.6	156.4
67.5°	97.7	113.2	129.7	142.1	145.1
70°	84.6	100.8	118.8	130.8	134.6
72.5°	72.6	88.7	107.5	119.9	123.7
75°	59.8	77.4	96.2	108.6	113.2
77.5°	48.9	66.5	85.3	98.5	101.9
80°	37.2	55.6	75.2	88.0	91.7
82.5°	27.1	45.9	65.8	78.6	82.3
85°	18.4	37.2	57.1	69.9	73.7
87.5°	11.3	30.1	49.2	62.0	65.8
90°	4.9	23.3	42.5	55.3	59.0
92.5°	4.5	20.7	39.5	51.9	55.3
95°	4.1	18.8	37.2	48.9	52.6
97.5°	3.8	17.3	35.0	46.2	50.0
100°	3.4	15.4	32.7	43.6	47.4
102.5°	3.0	13.5	30.5	41.0	44.7
105°	3.0	12.0	28.2	38.7	42.1
107.5°	2.6	10.5	25.9	36.1	39.5
110°	2.3	9.0	24.1	33.8	36.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.3	7.5	21.8	31.2	34.6
115°	1.9	6.4	19.9	28.9	32.0
117.5°	1.9	4.9	17.7	26.7	29.7
120°	1.5	3.4	15.8	24.4	27.1
122.5°	1.5	2.3	13.9	22.2	24.8
125°	1.1	1.1	12.0	19.9	22.6
127.5°	1.1	0.8	10.2	17.7	20.3
130°	1.1	0.8	8.3	15.4	17.7
132.5°	0.8	0.8	6.4	13.2	15.8
135°	0.8	0.4	4.5	11.3	13.2
137.5°	0.8	0.4	3.0	9.0	10.9
140°	0.4	0.4	1.5	7.1	9.0
142.5°	0.4	0.0	0.0	4.9	6.8
145°	0.4	0.0	0.0	3.0	4.5
147.5°	0.0	0.0	0.0	1.1	2.6
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	14.02	15.53	14.51	16.01	16.52	16.02	17.53	16.51	18.01	18.52
	3H	15.58	16.95	16.08	17.44	18.00	18.40	19.77	18.90	20.26	20.82
	4H	16.10	17.40	16.62	17.91	18.48	19.51	20.81	20.03	21.32	21.89
	6H	16.45	17.66	16.98	18.18	18.76	20.62	21.83	21.16	22.35	22.94
	8H	16.53	17.69	17.08	18.24	18.83	21.18	22.33	21.72	22.88	23.47
	12H	16.58	17.69	17.14	18.23	18.85	21.78	22.89	22.34	23.43	24.05
4H	2H	14.93	16.23	15.45	16.74	17.31	16.48	17.78	17.00	18.29	18.86
	3H	16.73	17.84	17.27	18.39	18.98	19.07	20.18	19.61	20.73	21.32
	4H	17.40	18.41	17.95	18.97	19.59	20.34	21.35	20.90	21.91	22.54
	6H	17.87	18.76	18.45	19.35	19.99	21.63	22.52	22.20	23.10	23.74
	8H	18.01	18.85	18.59	19.43	20.08	22.28	23.12	22.86	23.70	24.35
	12H	18.09	18.86	18.70	19.47	20.12	22.99	23.75	23.59	24.37	25.02
8H	4H	18.03	18.87	18.61	19.46	20.11	20.57	21.41	21.15	21.99	22.64
	6H	18.69	19.40	19.30	20.02	20.68	22.01	22.72	22.62	23.35	24.00
	8H	18.92	19.56	19.54	20.20	20.87	22.78	23.43	23.41	24.06	24.73
	12H	19.09	19.66	19.72	20.29	21.02	23.67	24.24	24.29	24.86	25.60
12H	4H	18.19	18.95	18.79	19.56	20.22	20.58	21.34	21.18	21.95	22.61
	6H	18.93	19.57	19.55	20.21	20.87	22.05	22.69	22.67	23.33	24.00
	8H	19.25	19.82	19.88	20.45	21.18	22.89	23.46	23.52	24.09	24.82