

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: P243380

Luminaire Tested: S123DRP-H340D940-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243380
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-54)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DRP-H340D940-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

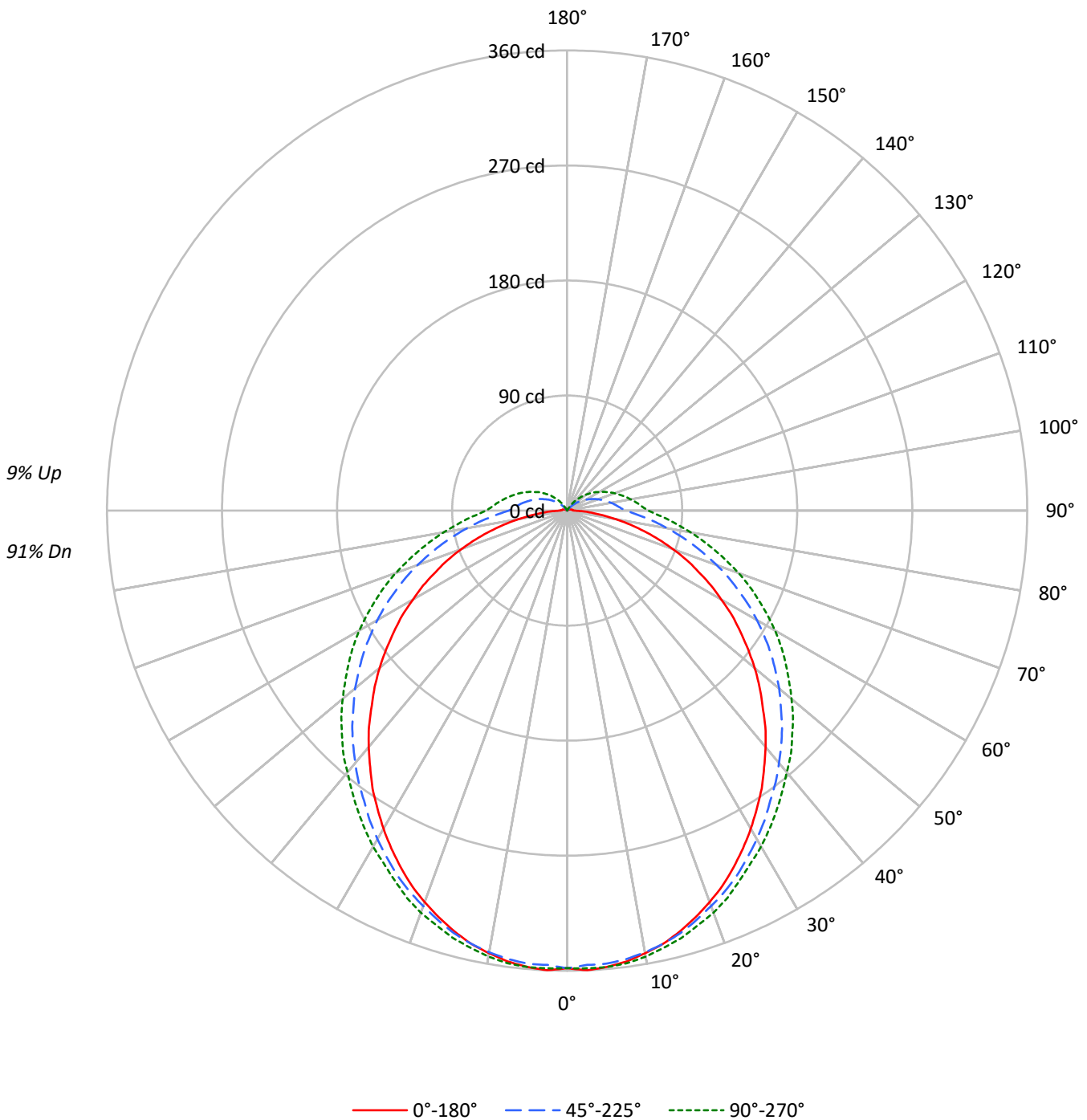
Lumens per Lamp: N/A
Luminaire Lumens: 1215.1 lumens
Efficiency: N/A
Efficacy: 108.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 11.2
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	91
1	105	100	95	90	101	96	92	88	91	87	84	85	82	80	80	78	76	73
2	95	86	79	72	91	83	77	71	78	73	68	74	69	65	69	66	62	60
3	86	75	66	60	83	73	65	58	69	62	56	65	59	54	61	56	52	50
4	79	66	57	50	76	64	56	49	61	53	48	57	51	46	54	49	45	42
5	72	59	50	43	70	57	49	42	54	47	41	51	45	40	49	43	39	36
6	67	53	44	37	64	52	43	37	49	41	36	46	40	35	44	38	34	31
7	62	48	39	33	60	47	38	32	44	37	32	42	36	31	40	34	30	28
8	57	44	35	29	55	43	34	29	41	33	28	39	32	27	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	23	35	28	23	33	27	22	32	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4339	4339	4339
5°	4353	4228	4226
10°	4311	4121	4098
15°	4252	4003	3956
20°	4171	3863	3814
25°	4078	3735	3650
30°	3973	3590	3511
35°	3869	3442	3372
40°	3754	3322	3241
45°	3626	3204	3130
50°	3521	3082	3015
55°	3391	2959	2903
60°	3253	2822	2793
65°	3112	2676	2659
70°	2948	2520	2528
75°	2701	2351	2374
80°	2389	2181	2238
85°	2121	2046	2134

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3626 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	34.0	2.8
10°-20°	96.9	8.0
20°-30°	145.1	11.9
30°-40°	173.6	14.3
40°-50°	182.1	15.0
50°-60°	171.2	14.1
60°-70°	143.3	11.8
70°-80°	102.8	8.5
80°-90°	61.6	5.1
90°-100°	39.0	3.2
100°-110°	28.8	2.4
110°-120°	19.3	1.6
120°-130°	11.1	0.9
130°-140°	5.1	0.4
140°-150°	1.2	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	276.0	22.7
0°-40°	449.7	37.0
0°-60°	802.9	66.1
0°-90°	1110.6	91.4
90°-120°	87.1	7.2
90°-150°	104.5	8.6
90°-180°	104.0	8.6
0°-180°	1215.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	358	358	358	358	358	
5°	358	358	356	359	358	34
15°	341	343	342	347	346	96
25°	308	312	315	320	319	142
35°	265	272	277	284	286	166
45°	216	227	238	246	249	167
55°	165	179	194	205	209	148
65°	114	130	148	161	165	113
75°	62	81	101	115	120	66
85°	19	39	60	74	79	20
90°	5	25	46	59	64	4
95°	4	20	40	52	56	3
105°	3	13	30	41	45	3
115°	2	7	21	31	34	2
125°	2	2	13	21	24	1
135°	1	0	6	12	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°	358.0	358.0	358.0	358.0	358.0
2.5°	359.9	358.7	355.8	359.1	358.4
5°	358.4	358.0	355.8	358.7	358.4
7.5°	355.8	355.8	353.9	357.2	357.2
10°	351.6	352.8	350.9	354.6	354.3
12.5°	347.2	348.7	347.2	351.3	350.2
15°	340.8	343.1	342.3	346.8	346.0
17.5°	333.7	336.3	336.0	340.4	340.1
20°	325.9	329.2	329.2	333.7	334.8
22.5°	317.7	321.4	322.5	327.0	327.8
25°	308.0	312.1	314.7	319.5	319.2
27.5°	297.9	302.7	305.7	311.0	311.0
30°	287.4	293.0	296.8	302.4	303.5
32.5°	276.2	283.0	287.4	293.4	294.9
35°	265.4	271.8	277.0	284.1	285.9
37.5°	253.1	260.9	268.0	275.5	276.6
40°	241.5	250.1	257.9	265.8	267.3
42.5°	229.6	238.5	247.9	255.7	259.1
45°	216.1	227.0	237.8	246.0	249.0
47.5°	204.2	215.0	226.6	236.3	239.7
50°	191.5	202.7	216.5	225.8	229.2
52.5°	178.4	190.8	205.3	215.4	218.8
55°	165.4	179.2	194.5	204.9	208.7
57.5°	153.1	166.9	182.9	194.5	198.6
60°	139.2	154.5	171.3	183.3	187.8
62.5°	126.9	142.6	160.1	172.1	176.6
65°	113.5	130.3	147.8	160.9	165.0
67.5°	101.2	117.6	136.6	149.7	154.2
70°	88.1	105.3	124.3	137.7	142.6
72.5°	75.0	93.3	112.7	126.5	130.7
75°	62.3	81.4	101.2	115.0	119.5
77.5°	50.4	69.4	90.0	103.8	108.6
80°	38.4	58.2	79.5	93.3	98.2
82.5°	28.0	48.2	69.8	83.2	87.7
85°	19.0	38.8	60.5	74.3	79.1
87.5°	11.2	31.4	52.3	66.1	70.2
90°	5.2	24.6	45.5	59.4	63.5
92.5°	4.9	22.0	42.2	55.2	59.4
95°	4.1	20.2	39.6	52.3	56.4
97.5°	4.1	18.3	37.3	49.6	53.4
100°	3.7	16.4	35.1	46.7	50.4
102.5°	3.4	14.6	32.5	44.0	47.8
105°	3.0	13.1	30.2	41.4	44.8
107.5°	2.6	11.2	28.0	38.8	42.2
110°	2.6	9.7	25.8	36.2	39.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.2	8.2	23.5	33.6	37.0
115°	1.9	6.7	21.3	31.0	34.3
117.5°	1.9	5.2	19.0	28.7	31.7
120°	1.9	4.1	17.2	26.1	29.1
122.5°	1.5	2.6	15.3	23.9	26.9
125°	1.5	1.5	13.1	21.3	24.3
127.5°	1.1	0.7	11.2	19.0	21.7
130°	1.1	0.7	9.3	16.8	19.4
132.5°	0.7	0.7	7.5	14.6	17.2
135°	0.7	0.4	5.6	12.3	14.6
137.5°	0.7	0.4	3.7	10.1	12.3
140°	0.4	0.4	1.9	7.8	10.1
142.5°	0.4	0.0	0.4	6.0	7.8
145°	0.4	0.0	0.0	3.7	5.2
147.5°	0.4	0.0	0.0	1.9	3.4
150°	0.4	0.0	0.0	0.0	1.1
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	14.14	15.64	14.63	16.12	16.64	16.20	17.71	16.70	18.19	18.71
	3H	15.69	17.06	16.19	17.55	18.11	18.60	19.97	19.10	20.46	21.02
	4H	16.21	17.51	16.74	18.02	18.60	19.71	21.01	20.24	21.52	22.10
	6H	16.55	17.76	17.09	18.29	18.88	20.84	22.05	21.38	22.57	23.16
	8H	16.64	17.80	17.19	18.35	18.94	21.40	22.56	21.95	23.11	23.71
	12H	16.69	17.80	17.24	18.34	18.97	22.02	23.13	22.58	23.67	24.30
4H	2H	15.05	16.35	15.58	16.86	17.43	16.65	17.95	17.18	18.46	19.04
	3H	16.85	17.96	17.39	18.51	19.11	19.26	20.37	19.80	20.92	21.52
	4H	17.52	18.53	18.08	19.10	19.72	20.54	21.55	21.10	22.11	22.74
	6H	17.99	18.88	18.57	19.47	20.11	21.84	22.73	22.42	23.32	23.96
	8H	18.13	18.97	18.71	19.55	20.21	22.50	23.34	23.08	23.93	24.58
	12H	18.21	18.97	18.82	19.59	20.25	23.23	23.99	23.83	24.61	25.27
8H	4H	18.17	19.01	18.75	19.59	20.25	20.76	21.60	21.35	22.19	22.85
	6H	18.82	19.53	19.44	20.16	20.82	22.22	22.93	22.84	23.56	24.22
	8H	19.05	19.70	19.68	20.34	21.01	23.01	23.65	23.63	24.29	24.96
	12H	19.22	19.80	19.85	20.42	21.16	23.90	24.47	24.53	25.10	25.84
12H	4H	18.33	19.09	18.93	19.70	20.36	20.77	21.54	21.38	22.15	22.81
	6H	19.07	19.71	19.70	20.35	21.02	22.26	22.91	22.89	23.54	24.22
	8H	19.40	19.97	20.02	20.60	21.33	23.11	23.69	23.74	24.31	25.05