

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: P243366

Luminaire Tested: S123DRP-H560D840-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243366
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-H560D840-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

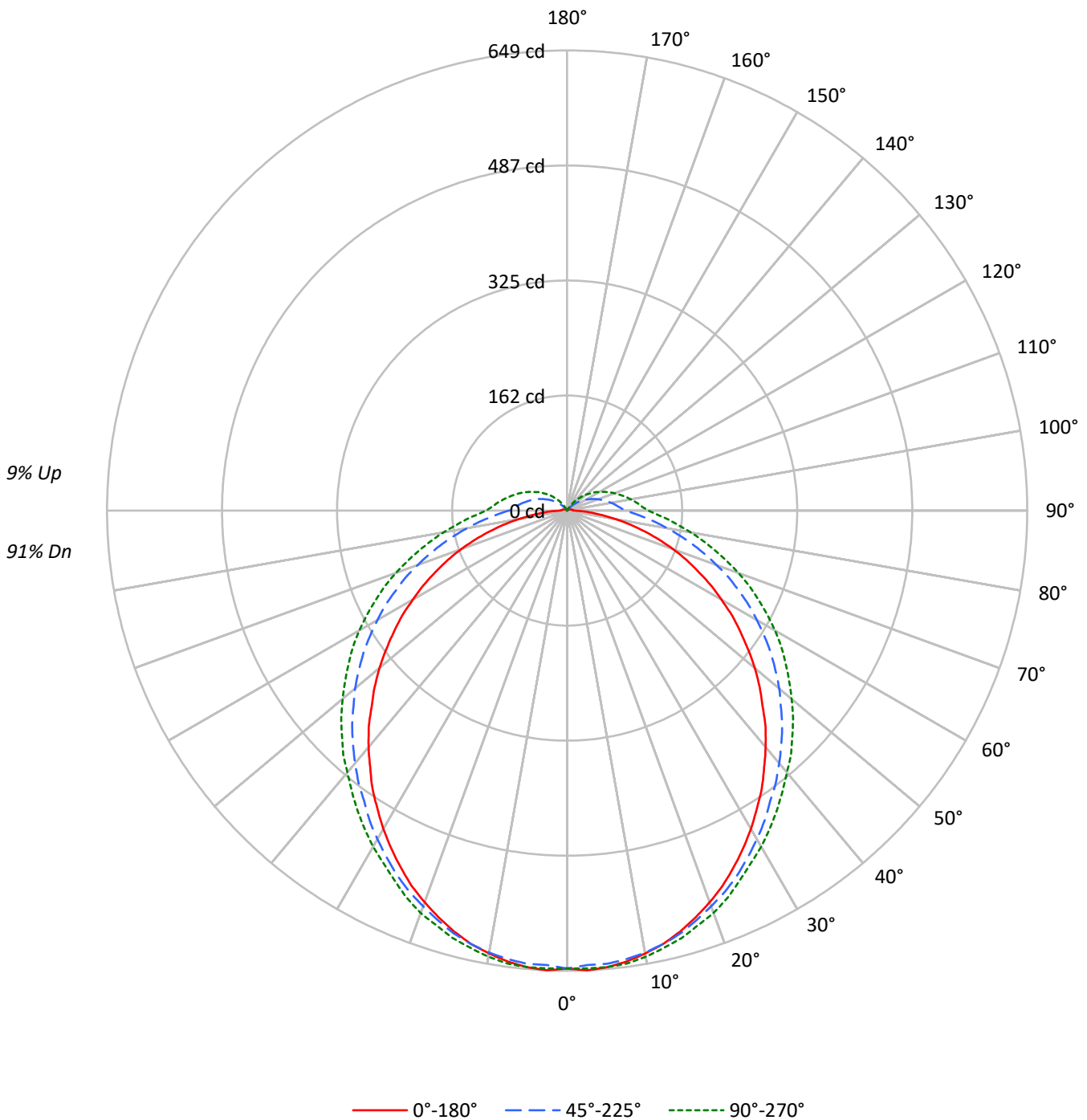
Lumens per Lamp: N/A
Luminaire Lumens: 2191.5 lumens
Efficiency: N/A
Efficacy: 127.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 17.2
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°	7827	7827	7827
5°	7849	7625	7621
10°	7776	7433	7390
15°	7670	7221	7136
20°	7523	6969	6879
25°	7354	6736	6582
30°	7167	6473	6332
35°	6978	6209	6082
40°	6770	5992	5845
45°	6541	5779	5646
50°	6351	5559	5439
55°	6116	5337	5236
60°	5869	5090	5036
65°	5612	4827	4796
70°	5317	4545	4560
75°	4873	4239	4280
80°	4312	3934	4037
85°	3829	3689	3849

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6541 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	61.3	2.8
10°-20°	174.8	8.0
20°-30°	261.7	11.9
30°-40°	313.2	14.3
40°-50°	328.4	15.0
50°-60°	308.7	14.1
60°-70°	258.4	11.8
70°-80°	185.4	8.5
80°-90°	111.1	5.1
90°-100°	70.4	3.2
100°-110°	51.9	2.4
110°-120°	34.7	1.6
120°-130°	20.0	0.9
130°-140°	9.2	0.4
140°-150°	2.1	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	497.8	22.7
0°-40°	811.0	37.0
0°-60°	1448.1	66.1
0°-90°	2003.0	91.4
90°-120°	157.0	7.2
90°-150°	188.4	8.6
90°-180°	188.0	8.6
0°-180°	2191.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	646	646	646	646	646	
5°	646	646	642	647	646	61
15°	615	619	617	626	624	173
25°	555	563	568	576	576	256
35°	479	490	500	512	516	299
45°	390	409	429	444	449	302
55°	298	323	351	370	376	267
65°	205	235	267	290	298	203
75°	112	147	182	207	215	119
85°	34	70	109	134	143	35
90°	9	44	82	107	114	7
95°	7	36	71	94	102	6
105°	5	24	54	75	81	6
115°	3	12	38	56	62	4
125°	3	3	24	38	44	2
135°	1	1	10	22	26	1
145°	1	0	0	7	9	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°	645.7	645.7	645.7	645.7	645.7
2.5°	649.0	647.0	641.6	647.7	646.3
5°	646.3	645.7	641.6	647.0	646.3
7.5°	641.6	641.6	638.2	644.3	644.3
10°	634.2	636.2	632.9	639.6	638.9
12.5°	626.1	628.8	626.1	633.5	631.5
15°	614.7	618.7	617.4	625.5	624.1
17.5°	601.9	606.6	605.9	614.0	613.3
20°	587.8	593.8	593.8	601.9	603.9
22.5°	572.9	579.7	581.7	589.8	591.1
25°	555.4	562.8	567.6	576.3	575.6
27.5°	537.3	546.0	551.4	560.8	560.8
30°	518.4	528.5	535.2	545.3	547.4
32.5°	498.2	510.3	518.4	529.2	531.9
35°	478.7	490.1	499.6	512.3	515.7
37.5°	456.5	470.6	483.4	496.9	498.9
40°	435.6	451.1	465.2	479.4	482.1
42.5°	414.1	430.2	447.0	461.2	467.2
45°	389.8	409.3	428.9	443.7	449.1
47.5°	368.3	387.8	408.7	426.2	432.2
50°	345.4	365.6	390.5	407.3	413.4
52.5°	321.8	344.0	370.3	388.5	394.5
55°	298.3	323.2	350.8	369.6	376.4
57.5°	276.0	300.9	329.9	350.8	358.2
60°	251.1	278.7	309.0	330.6	338.6
62.5°	228.9	257.2	288.8	310.4	318.5
65°	204.7	235.0	266.6	290.2	297.6
67.5°	182.5	212.1	246.4	270.0	278.1
70°	158.9	189.9	224.2	248.4	257.2
72.5°	135.3	168.3	203.3	228.2	235.6
75°	112.4	146.8	182.5	207.4	215.4
77.5°	90.9	125.2	162.3	187.2	195.9
80°	69.3	105.0	143.4	168.3	177.1
82.5°	50.5	86.9	125.9	150.1	158.2
85°	34.3	70.0	109.1	134.0	142.7
87.5°	20.2	56.6	94.3	119.2	126.6
90°	9.4	44.4	82.1	107.0	114.5
92.5°	8.8	39.7	76.1	99.6	107.0
95°	7.4	36.4	71.4	94.3	101.7
97.5°	7.4	33.0	67.3	89.5	96.3
100°	6.7	29.6	63.3	84.2	90.9
102.5°	6.1	26.3	58.6	79.4	86.2
105°	5.4	23.6	54.5	74.7	80.8
107.5°	4.7	20.2	50.5	70.0	76.1
110°	4.7	17.5	46.5	65.3	71.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	4.0	14.8	42.4	60.6	66.7
115°	3.4	12.1	38.4	55.9	61.9
117.5°	3.4	9.4	34.3	51.8	57.2
120°	3.4	7.4	31.0	47.1	52.5
122.5°	2.7	4.7	27.6	43.1	48.5
125°	2.7	2.7	23.6	38.4	43.8
127.5°	2.0	1.3	20.2	34.3	39.0
130°	2.0	1.3	16.8	30.3	35.0
132.5°	1.3	1.3	13.5	26.3	31.0
135°	1.3	0.7	10.1	22.2	26.3
137.5°	1.3	0.7	6.7	18.2	22.2
140°	0.7	0.7	3.4	14.1	18.2
142.5°	0.7	0.0	0.7	10.8	14.1
145°	0.7	0.0	0.0	6.7	9.4
147.5°	0.7	0.0	0.0	3.4	6.1
150°	0.7	0.0	0.0	0.0	2.0
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	16.18	17.68	16.67	18.17	18.69	18.25	19.75	18.74	20.24	20.76
	3H	17.74	19.10	18.24	19.60	20.16	20.65	22.02	21.15	22.51	23.07
	4H	18.26	19.56	18.79	20.07	20.65	21.76	23.06	22.29	23.57	24.15
	6H	18.60	19.81	19.14	20.33	20.92	22.89	24.10	23.43	24.62	25.21
	8H	18.69	19.85	19.24	20.39	20.99	23.45	24.61	24.00	25.16	25.75
	12H	18.74	19.85	19.29	20.39	21.01	24.07	25.18	24.63	25.72	26.35
4H	2H	17.10	18.40	17.62	18.91	19.48	18.70	20.00	19.23	20.51	21.09
	3H	18.90	20.01	19.44	20.56	21.16	21.31	22.42	21.85	22.97	23.57
	4H	19.57	20.58	20.13	21.14	21.77	22.59	23.60	23.15	24.16	24.79
	6H	20.04	20.93	20.62	21.52	22.16	23.89	24.78	24.47	25.37	26.01
	8H	20.17	21.01	20.76	21.60	22.26	24.55	25.39	25.13	25.98	26.63
	12H	20.26	21.02	20.87	21.64	22.30	25.28	26.04	25.88	26.66	27.32
8H	4H	20.21	21.05	20.80	21.64	22.30	22.81	23.65	23.40	24.24	24.89
	6H	20.87	21.58	21.49	22.21	22.87	24.27	24.98	24.89	25.61	26.27
	8H	21.10	21.74	21.73	22.38	23.06	25.06	25.70	25.68	26.34	27.01
	12H	21.27	21.85	21.90	22.47	23.21	25.95	26.52	26.58	27.15	27.89
12H	4H	20.37	21.14	20.98	21.75	22.41	22.82	23.58	23.43	24.20	24.86
	6H	21.12	21.76	21.75	22.40	23.07	24.31	24.95	24.94	25.59	26.27
	8H	21.44	22.02	22.07	22.64	23.38	25.16	25.73	25.79	26.36	27.10