

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: P243353

Luminaire Tested: S123DRP-H775D927-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243353  
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-H775D927-X4F0-XX-UDD-D-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: -

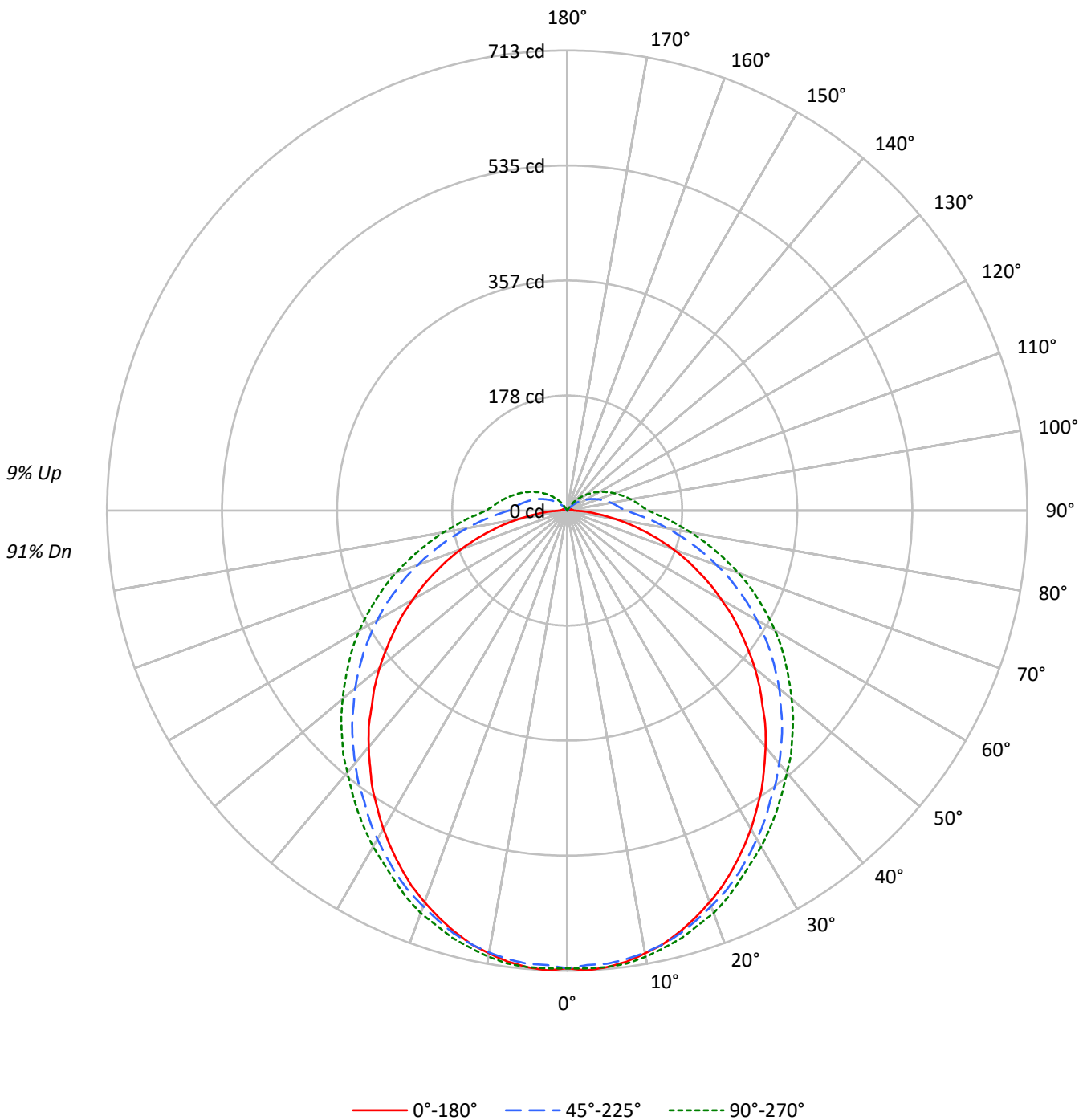
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2407.5 lumens  
Efficiency: N/A  
Efficacy: 102.0 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): 23.6  
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	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°	8598	8598	8598
5°	8624	8377	8374
10°	8543	8166	8119
15°	8426	7933	7841
20°	8264	7656	7558
25°	8080	7399	7232
30°	7873	7112	6956
35°	7666	6820	6683
40°	7437	6583	6421
45°	7187	6348	6201
50°	6976	6108	5974
55°	6719	5864	5752
60°	6448	5592	5533
65°	6166	5303	5268
70°	5843	4993	5008
75°	5354	4655	4703
80°	4741	4321	4434
85°	4209	4051	4229

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7187 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	67.3	2.8
10°-20°	192.0	8.0
20°-30°	287.5	11.9
30°-40°	344.1	14.3
40°-50°	360.8	15.0
50°-60°	339.2	14.1
60°-70°	283.9	11.8
70°-80°	203.7	8.5
80°-90°	122.0	5.1
90°-100°	77.4	3.2
100°-110°	57.0	2.4
110°-120°	38.2	1.6
120°-130°	22.0	0.9
130°-140°	10.1	0.4
140°-150°	2.3	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	546.9	22.7
0°-40°	890.9	37.0
0°-60°	1590.9	66.1
0°-90°	2200.5	91.4
90°-120°	172.5	7.2
90°-150°	207.0	8.6
90°-180°	207.0	8.6
0°-180°	2407.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	709	709	709	709	709	
5°	710	709	705	711	710	67
15°	675	680	678	687	686	190
25°	610	618	624	633	632	281
35°	526	538	549	563	567	328
45°	428	450	471	487	493	331
55°	328	355	385	406	414	293
65°	225	258	293	319	327	223
75°	124	161	200	228	237	131
85°	38	77	120	147	157	39
90°	10	49	90	118	126	7
95°	8	40	78	104	112	7
105°	6	26	60	82	89	6
115°	4	13	42	61	68	4
125°	3	3	26	42	48	3
135°	2	1	11	24	29	1
145°	1	0	0	7	10	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°	709.3	709.3	709.3	709.3	709.3
2.5°	713.0	710.8	704.9	711.5	710.1
5°	710.1	709.3	704.9	710.8	710.1
7.5°	704.9	704.9	701.2	707.8	707.8
10°	696.7	699.0	695.3	702.7	701.9
12.5°	687.9	690.8	687.9	696.0	693.8
15°	675.3	679.7	678.3	687.1	685.7
17.5°	661.2	666.4	665.7	674.6	673.8
20°	645.7	652.4	652.4	661.2	663.5
22.5°	629.4	636.8	639.1	647.9	649.4
25°	610.2	618.3	623.5	633.1	632.4
27.5°	590.2	599.9	605.8	616.1	616.1
30°	569.5	580.6	588.0	599.1	601.3
32.5°	547.3	560.7	569.5	581.4	584.3
35°	525.9	538.5	548.8	562.9	566.6
37.5°	501.5	517.0	531.1	545.9	548.1
40°	478.5	495.6	511.1	526.6	529.6
42.5°	454.9	472.6	491.1	506.7	513.3
45°	428.3	449.7	471.2	487.4	493.3
47.5°	404.6	426.0	449.0	468.2	474.9
50°	379.4	401.6	429.0	447.5	454.1
52.5°	353.5	378.0	406.8	426.8	433.4
55°	327.7	355.0	385.4	406.1	413.5
57.5°	303.3	330.6	362.4	385.4	393.5
60°	275.9	306.2	339.5	363.2	372.0
62.5°	251.5	282.5	317.3	341.0	349.9
65°	224.9	258.1	292.9	318.8	326.9
67.5°	200.4	233.0	270.7	296.6	305.5
70°	174.6	208.6	246.3	272.9	282.5
72.5°	148.7	184.9	223.4	250.7	258.9
75°	123.5	161.2	200.4	227.8	236.7
77.5°	99.9	137.6	178.3	205.6	215.2
80°	76.2	115.4	157.5	184.9	194.5
82.5°	55.5	95.4	138.3	164.9	173.8
85°	37.7	76.9	119.8	147.2	156.8
87.5°	22.2	62.1	103.6	130.9	139.1
90°	10.4	48.8	90.2	117.6	125.7
92.5°	9.6	43.6	83.6	109.5	117.6
95°	8.1	39.9	78.4	103.6	111.7
97.5°	8.1	36.2	74.0	98.4	105.8
100°	7.4	32.5	69.5	92.5	99.9
102.5°	6.7	28.8	64.3	87.3	94.7
105°	5.9	25.9	59.9	82.1	88.8
107.5°	5.2	22.2	55.5	76.9	83.6
110°	5.2	19.2	51.0	71.7	78.4



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	4.4	16.3	46.6	66.6	73.2
115°	3.7	13.3	42.2	61.4	68.0
117.5°	3.7	10.4	37.7	57.0	62.9
120°	3.7	8.1	34.0	51.8	57.7
122.5°	3.0	5.2	30.3	47.3	53.3
125°	3.0	3.0	25.9	42.2	48.1
127.5°	2.2	1.5	22.2	37.7	42.9
130°	2.2	1.5	18.5	33.3	38.5
132.5°	1.5	1.5	14.8	28.8	34.0
135°	1.5	0.7	11.1	24.4	28.8
137.5°	1.5	0.7	7.4	20.0	24.4
140°	0.7	0.7	3.7	15.5	20.0
142.5°	0.7	0.0	0.7	11.8	15.5
145°	0.7	0.0	0.0	7.4	10.4
147.5°	0.7	0.0	0.0	3.7	6.7
150°	0.7	0.0	0.0	0.0	2.2
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	16.51	18.01	17.00	18.50	19.02	18.58	20.08	19.07	20.57	21.09
	3H	18.06	19.43	18.57	19.93	20.49	20.97	22.34	21.48	22.84	23.40
	4H	18.59	19.89	19.11	20.40	20.97	22.09	23.39	22.61	23.90	24.47
	6H	18.93	20.14	19.47	20.66	21.25	23.22	24.42	23.75	24.95	25.54
	8H	19.02	20.17	19.57	20.72	21.32	23.78	24.94	24.33	25.48	26.08
	12H	19.06	20.17	19.62	20.71	21.34	24.40	25.51	24.95	26.05	26.67
4H	2H	17.42	18.72	17.95	19.23	19.81	19.03	20.33	19.56	20.84	21.41
	3H	19.23	20.33	19.77	20.89	21.48	21.64	22.75	22.18	23.30	23.90
	4H	19.90	20.91	20.45	21.47	22.10	22.91	23.93	23.47	24.49	25.12
	6H	20.37	21.26	20.95	21.85	22.49	24.22	25.11	24.79	25.70	26.34
	8H	20.50	21.34	21.09	21.93	22.58	24.87	25.71	25.46	26.30	26.96
	12H	20.59	21.35	21.19	21.97	22.63	25.60	26.37	26.21	26.98	27.64
8H	4H	20.54	21.38	21.13	21.97	22.62	23.14	23.98	23.72	24.57	25.22
	6H	21.20	21.91	21.81	22.54	23.20	24.60	25.31	25.21	25.94	26.60
	8H	21.43	22.07	22.06	22.71	23.38	25.38	26.02	26.01	26.66	27.34
	12H	21.60	22.17	22.23	22.80	23.54	26.28	26.85	26.91	27.48	28.22
12H	4H	20.70	21.46	21.31	22.08	22.74	23.15	23.91	23.75	24.53	25.19
	6H	21.45	22.09	22.07	22.73	23.40	24.64	25.28	25.27	25.92	26.59
	8H	21.77	22.34	22.40	22.97	23.71	25.49	26.06	26.12	26.69	27.43