

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: P243382

Luminaire Tested: S123DRP-H775D940-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243382  
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-H775D940-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: -

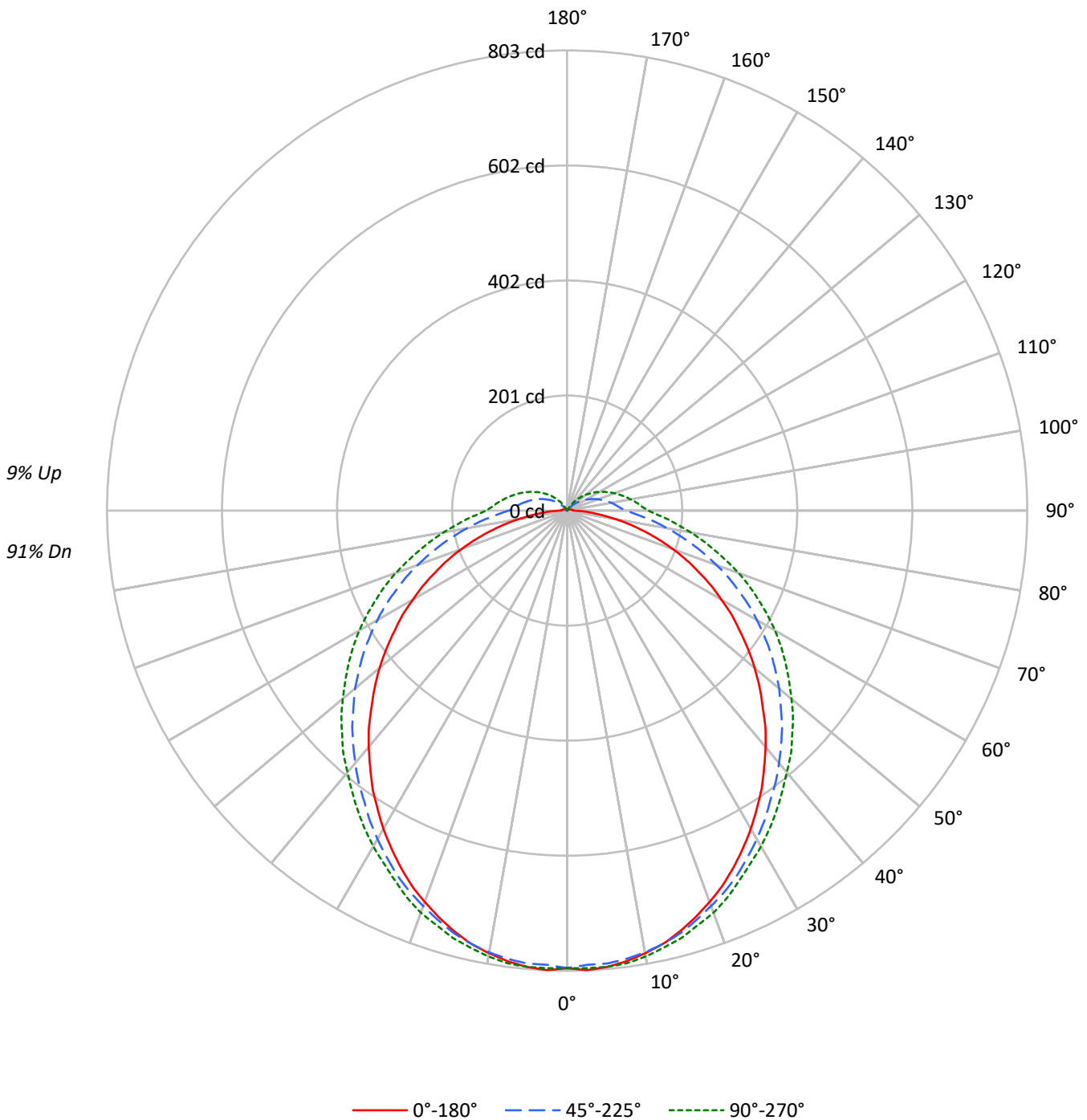
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2710.0 lumens  
Efficiency: N/A  
Efficacy: 114.8 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 (A<sub>in</sub>): 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°	9678	9678	9678
5°	9707	9429	9426
10°	9617	9191	9139
15°	9484	8929	8825
20°	9302	8618	8507
25°	9096	8330	8140
30°	8863	8006	7830
35°	8630	7678	7521
40°	8373	7410	7227
45°	8090	7145	6981
50°	7853	6875	6725
55°	7562	6600	6473
60°	7257	6296	6229
65°	6939	5970	5930
70°	6575	5619	5638
75°	6026	5240	5293
80°	5338	4864	4992
85°	4745	4562	4761

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8090 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	75.8	2.8
10°-20°	216.1	8.0
20°-30°	323.7	11.9
30°-40°	387.3	14.3
40°-50°	406.1	15.0
50°-60°	381.8	14.1
60°-70°	319.5	11.8
70°-80°	229.3	8.5
80°-90°	137.4	5.1
90°-100°	87.1	3.2
100°-110°	64.2	2.4
110°-120°	43.0	1.6
120°-130°	24.8	0.9
130°-140°	11.4	0.4
140°-150°	2.6	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	615.6	22.7
0°-40°	1002.9	37.0
0°-60°	1790.8	66.1
0°-90°	2476.9	91.4
90°-120°	194.2	7.2
90°-150°	233.0	8.6
90°-180°	233.0	8.6
0°-180°	2710.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	798	798	798	798	798	
5°	799	798	793	800	799	76
15°	760	765	764	774	772	214
25°	687	696	702	713	712	316
35°	592	606	618	634	638	370
45°	482	506	530	549	555	373
55°	369	400	434	457	465	330
65°	253	291	330	359	368	251
75°	139	182	226	256	266	148
85°	42	87	135	166	176	44
90°	12	55	102	132	142	8
95°	9	45	88	117	126	8
105°	7	29	67	92	100	7
115°	4	15	48	69	77	5
125°	3	3	29	48	54	3
135°	2	1	12	28	32	1
145°	1	0	0	8	12	1
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°	798.4	798.4	798.4	798.4	798.4
2.5°	802.6	800.1	793.4	800.9	799.3
5°	799.3	798.4	793.4	800.1	799.3
7.5°	793.4	793.4	789.3	796.8	796.8
10°	784.3	786.8	782.6	790.9	790.1
12.5°	774.3	777.6	774.3	783.4	781.0
15°	760.1	765.1	763.5	773.5	771.8
17.5°	744.3	750.1	749.3	759.3	758.5
20°	726.8	734.3	734.3	744.3	746.8
22.5°	708.5	716.8	719.3	729.3	731.0
25°	686.9	696.0	701.9	712.7	711.8
27.5°	664.4	675.2	681.9	693.5	693.5
30°	641.1	653.6	661.9	674.4	676.9
32.5°	616.1	631.1	641.1	654.4	657.7
35°	592.0	606.1	617.8	633.6	637.7
37.5°	564.5	582.0	597.8	614.4	616.9
40°	538.7	557.8	575.3	592.8	596.1
42.5°	512.0	532.0	552.8	570.3	577.8
45°	482.1	506.2	530.3	548.7	555.3
47.5°	455.4	479.6	505.4	527.0	534.5
50°	427.1	452.1	482.9	503.7	511.2
52.5°	398.0	425.4	457.9	480.4	487.9
55°	368.8	399.6	433.8	457.1	465.4
57.5°	341.4	372.2	408.0	433.8	442.9
60°	310.5	344.7	382.2	408.8	418.8
62.5°	283.1	318.0	357.2	383.8	393.8
65°	253.1	290.6	329.7	358.8	368.0
67.5°	225.6	262.3	304.7	333.9	343.9
70°	196.5	234.8	277.2	307.2	318.0
72.5°	167.3	208.1	251.4	282.2	291.4
75°	139.0	181.5	225.6	256.4	266.4
77.5°	112.4	154.9	200.6	231.5	242.3
80°	85.8	129.9	177.3	208.1	219.0
82.5°	62.4	107.4	155.7	185.7	195.7
85°	42.5	86.6	134.9	165.7	176.5
87.5°	25.0	69.9	116.6	147.4	156.5
90°	11.7	54.9	101.6	132.4	141.5
92.5°	10.8	49.1	94.1	123.2	132.4
95°	9.2	45.0	88.3	116.6	125.7
97.5°	9.2	40.8	83.3	110.7	119.1
100°	8.3	36.6	78.3	104.1	112.4
102.5°	7.5	32.5	72.4	98.2	106.6
105°	6.7	29.1	67.4	92.4	99.9
107.5°	5.8	25.0	62.4	86.6	94.1
110°	5.8	21.6	57.4	80.8	88.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	5.0	18.3	52.5	74.9	82.4
115°	4.2	15.0	47.5	69.1	76.6
117.5°	4.2	11.7	42.5	64.1	70.8
120°	4.2	9.2	38.3	58.3	64.9
122.5°	3.3	5.8	34.1	53.3	59.9
125°	3.3	3.3	29.1	47.5	54.1
127.5°	2.5	1.7	25.0	42.5	48.3
130°	2.5	1.7	20.8	37.5	43.3
132.5°	1.7	1.7	16.7	32.5	38.3
135°	1.7	0.8	12.5	27.5	32.5
137.5°	1.7	0.8	8.3	22.5	27.5
140°	0.8	0.8	4.2	17.5	22.5
142.5°	0.8	0.0	0.8	13.3	17.5
145°	0.8	0.0	0.0	8.3	11.7
147.5°	0.8	0.0	0.0	4.2	7.5
150°	0.8	0.0	0.0	0.0	2.5
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	16.92	18.42	17.41	18.91	19.43	18.99	20.49	19.48	20.98	21.50
	3H	18.47	19.84	18.98	20.34	20.90	21.39	22.75	21.89	23.25	23.81
	4H	19.00	20.30	19.52	20.81	21.38	22.50	23.80	23.03	24.31	24.88
	6H	19.34	20.55	19.88	21.07	21.66	23.63	24.84	24.17	25.36	25.95
	8H	19.43	20.58	19.98	21.13	21.73	24.19	25.35	24.74	25.90	26.49
	12H	19.47	20.58	20.03	21.13	21.75	24.81	25.92	25.37	26.46	27.09
4H	2H	17.84	19.13	18.36	19.65	20.22	19.44	20.74	19.97	21.25	21.82
	3H	19.64	20.74	20.18	21.30	21.89	22.05	23.16	22.59	23.71	24.31
	4H	20.31	21.32	20.87	21.88	22.51	23.33	24.34	23.88	24.90	25.53
	6H	20.78	21.67	21.36	22.26	22.90	24.63	25.52	25.21	26.11	26.75
	8H	20.91	21.75	21.50	22.34	23.00	25.29	26.13	25.87	26.71	27.37
	12H	21.00	21.76	21.60	22.38	23.04	26.02	26.78	26.62	27.39	28.05
8H	4H	20.95	21.79	21.54	22.38	23.04	23.55	24.39	24.13	24.98	25.63
	6H	21.61	22.32	22.22	22.95	23.61	25.01	25.72	25.62	26.35	27.01
	8H	21.84	22.48	22.47	23.12	23.79	25.79	26.44	26.42	27.08	27.75
	12H	22.01	22.58	22.64	23.21	23.95	26.69	27.26	27.32	27.89	28.63
12H	4H	21.11	21.87	21.72	22.49	23.15	23.56	24.32	24.17	24.94	25.60
	6H	21.86	22.50	22.48	23.14	23.81	25.05	25.69	25.68	26.33	27.00
	8H	22.18	22.75	22.81	23.38	24.12	25.90	26.47	26.53	27.10	27.84