

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: P243372

Luminaire Tested: S123DRP-H775D930-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243372  
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-H775D930-X4F0-XX-UDD-D-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

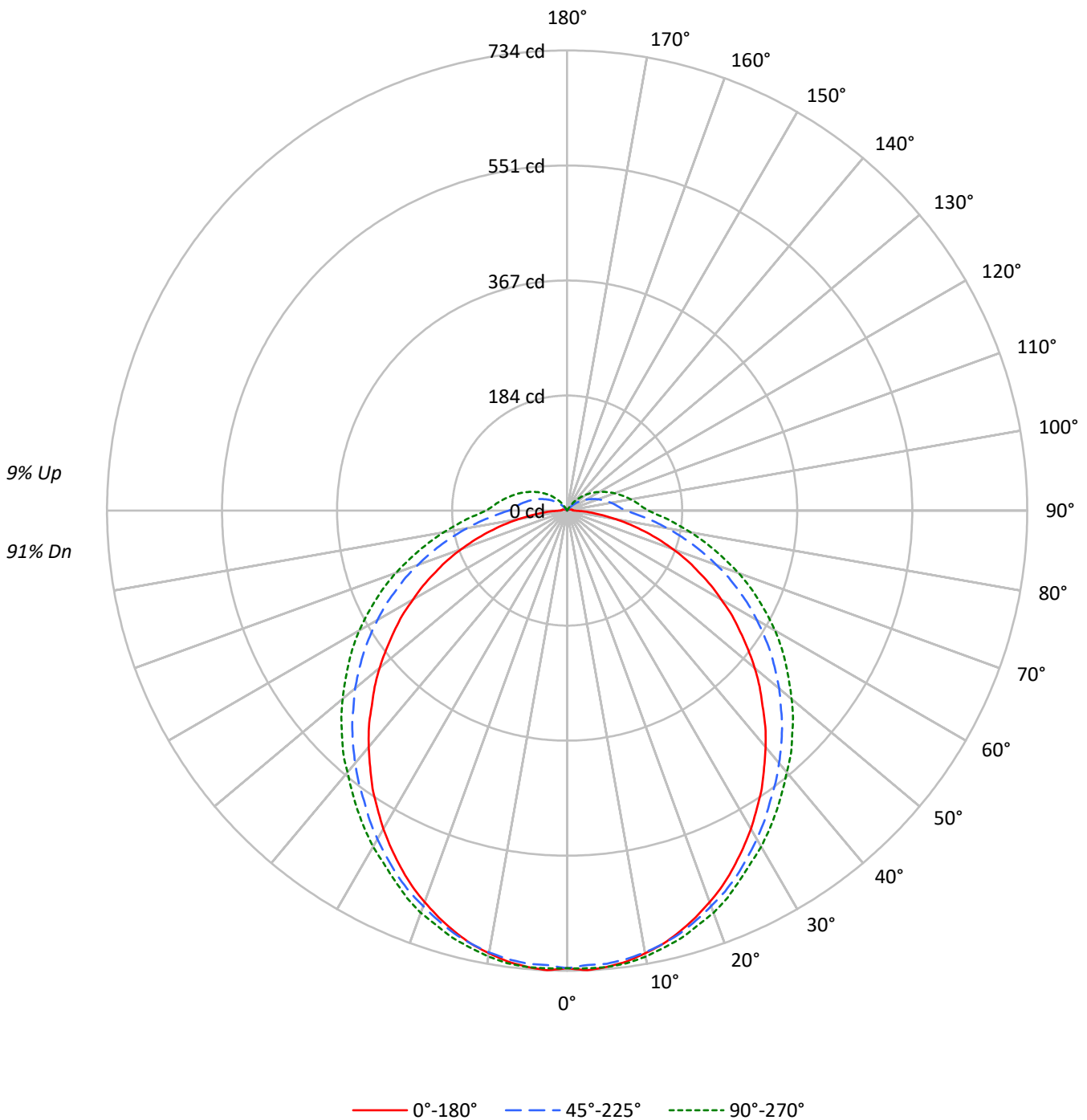
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2477.8 lumens  
Efficiency: N/A  
Efficacy: 105.0 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 (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

TEST NUMBER: P243372

CATALOG NUMBER: S123DRP-H775D930-X4F0-XX-UDD-D-W

### 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	50	30	10	0	
RCR																						
0	117	117	117	117	113	113	113	113	106	106	106	100	100	100	94	94	94	94	94	94	91	
1	105	100	95	90	101	96	92	88	91	87	84	85	82	80	80	78	76	76	76	76	73	
2	95	86	79	72	91	83	77	71	78	73	68	74	69	65	69	66	62	62	62	62	60	
3	86	75	66	60	83	73	65	58	69	62	56	65	59	54	61	56	52	52	52	52	50	
4	79	66	57	50	76	64	56	49	61	53	48	57	51	46	54	49	45	45	45	45	42	
5	72	59	50	43	70	57	49	42	54	47	41	51	45	40	49	43	39	39	39	39	36	
6	67	53	44	37	64	52	43	37	49	41	36	46	40	35	44	38	34	34	34	34	31	
7	62	48	39	33	60	47	38	32	44	37	32	42	36	31	40	34	30	30	30	30	28	
8	57	44	35	29	55	43	34	29	41	33	28	39	32	27	37	31	27	27	27	27	25	
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	28	24	24	24	24	22	
10	50	37	29	24	49	36	29	23	35	28	23	33	27	22	32	26	22	22	22	22	20	

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	8848	8848	8848
5°	8875	8622	8618
10°	8793	8404	8356
15°	8671	8163	8069
20°	8506	7879	7778
25°	8316	7615	7442
30°	8103	7320	7159
35°	7889	7019	6877
40°	7655	6775	6608
45°	7397	6533	6382
50°	7180	6286	6149
55°	6914	6034	5918
60°	6635	5756	5695
65°	6344	5457	5423
70°	6010	5139	5155
75°	5510	4792	4840
80°	4878	4447	4564
85°	4331	4170	4353

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7397 cd/sqm



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CATALOG NUMBER: S123DRP-H775D930-X4F0-XX-UDD-D-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	69.3	2.8
10°-20°	197.6	8.0
20°-30°	295.9	11.9
30°-40°	354.1	14.3
40°-50°	371.3	15.0
50°-60°	349.1	14.1
60°-70°	292.1	11.8
70°-80°	209.7	8.5
80°-90°	125.6	5.1
90°-100°	79.6	3.2
100°-110°	58.7	2.4
110°-120°	39.3	1.6
120°-130°	22.6	0.9
130°-140°	10.4	0.4
140°-150°	2.4	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	562.8	22.7
0°-40°	916.9	37.0
0°-60°	1637.3	66.1
0°-90°	2264.7	91.4
90°-120°	177.6	7.2
90°-150°	213.0	8.6
90°-180°	213.0	8.6
0°-180°	2477.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	730	730	730	730	730	
5°	731	730	726	732	731	69
15°	695	700	698	707	706	196
25°	628	636	642	652	651	289
35°	541	554	565	579	583	338
45°	441	463	485	502	508	341
55°	337	365	397	418	426	302
65°	231	266	301	328	336	230
75°	127	166	206	234	244	135
85°	39	79	123	152	161	40
90°	11	50	93	121	129	7
95°	8	41	81	107	115	7
105°	6	27	62	84	91	7
115°	4	14	43	63	70	4
125°	3	3	27	43	50	3
135°	2	1	11	25	30	1
145°	1	0	0	8	11	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°	730.0	730.0	730.0	730.0	730.0
2.5°	733.8	731.5	725.5	732.3	730.8
5°	730.8	730.0	725.5	731.5	730.8
7.5°	725.5	725.5	721.6	728.5	728.5
10°	717.1	719.4	715.6	723.2	722.4
12.5°	707.9	711.0	707.9	716.3	714.0
15°	695.0	699.6	698.0	707.2	705.7
17.5°	680.5	685.9	685.1	694.2	693.5
20°	664.6	671.4	671.4	680.5	682.8
22.5°	647.8	655.4	657.7	666.8	668.4
25°	628.0	636.4	641.7	651.6	650.8
27.5°	607.5	617.4	623.4	634.1	634.1
30°	586.1	597.6	605.2	616.6	618.9
32.5°	563.3	577.0	586.1	598.3	601.4
35°	541.2	554.2	564.8	579.3	583.1
37.5°	516.1	532.1	546.6	561.8	564.1
40°	492.5	510.0	526.0	542.0	545.0
42.5°	468.2	486.4	505.5	521.4	528.3
45°	440.8	462.8	484.9	501.6	507.7
47.5°	416.4	438.5	462.1	481.9	488.7
50°	390.5	413.3	441.5	460.5	467.4
52.5°	363.9	389.0	418.7	439.2	446.1
55°	337.2	365.4	396.6	417.9	425.5
57.5°	312.1	340.3	373.0	396.6	405.0
60°	283.9	315.1	349.4	373.8	382.9
62.5°	258.8	290.8	326.6	350.9	360.1
65°	231.4	265.7	301.4	328.1	336.5
67.5°	206.3	239.8	278.6	305.3	314.4
70°	179.6	214.7	253.5	280.9	290.8
72.5°	153.0	190.3	229.9	258.1	266.4
75°	127.1	165.9	206.3	234.5	243.6
77.5°	102.8	141.6	183.5	211.6	221.5
80°	78.4	118.8	162.1	190.3	200.2
82.5°	57.1	98.2	142.3	169.8	178.9
85°	38.8	79.2	123.3	151.5	161.4
87.5°	22.8	63.9	106.6	134.7	143.1
90°	10.7	50.2	92.9	121.0	129.4
92.5°	9.9	44.9	86.0	112.7	121.0
95°	8.4	41.1	80.7	106.6	114.9
97.5°	8.4	37.3	76.1	101.2	108.9
100°	7.6	33.5	71.6	95.2	102.8
102.5°	6.9	29.7	66.2	89.8	97.4
105°	6.1	26.6	61.7	84.5	91.3
107.5°	5.3	22.8	57.1	79.2	86.0
110°	5.3	19.8	52.5	73.8	80.7



TEST NUMBER: P243372

CATALOG NUMBER: S123DRP-H775D930-X4F0-XX-UDD-D-W

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	4.6	16.7	48.0	68.5	75.4
115°	3.8	13.7	43.4	63.2	70.0
117.5°	3.8	10.7	38.8	58.6	64.7
120°	3.8	8.4	35.0	53.3	59.4
122.5°	3.0	5.3	31.2	48.7	54.8
125°	3.0	3.0	26.6	43.4	49.5
127.5°	2.3	1.5	22.8	38.8	44.2
130°	2.3	1.5	19.0	34.3	39.6
132.5°	1.5	1.5	15.2	29.7	35.0
135°	1.5	0.8	11.4	25.1	29.7
137.5°	1.5	0.8	7.6	20.6	25.1
140°	0.8	0.8	3.8	16.0	20.6
142.5°	0.8	0.0	0.8	12.2	16.0
145°	0.8	0.0	0.0	7.6	10.7
147.5°	0.8	0.0	0.0	3.8	6.9
150°	0.8	0.0	0.0	0.0	2.3
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	16.61	18.11	17.10	18.60	19.12	18.68	20.18	19.17	20.67	21.19
	3H	18.16	19.53	18.67	20.03	20.59	21.07	22.44	21.58	22.94	23.50
	4H	18.69	19.99	19.21	20.50	21.07	22.19	23.49	22.71	24.00	24.57
	6H	19.03	20.24	19.57	20.76	21.35	23.32	24.52	23.85	25.05	25.64
	8H	19.12	20.27	19.67	20.82	21.42	23.88	25.04	24.43	25.58	26.18
	12H	19.16	20.27	19.72	20.81	21.44	24.50	25.61	25.05	26.15	26.77
4H	2H	17.53	18.82	18.05	19.33	19.91	19.13	20.43	19.66	20.94	21.51
	3H	19.33	20.43	19.87	20.99	21.58	21.74	22.85	22.28	23.40	24.00
	4H	20.00	21.01	20.55	21.57	22.20	23.01	24.03	23.57	24.59	25.22
	6H	20.47	21.36	21.05	21.95	22.59	24.32	25.21	24.89	25.80	26.44
	8H	20.60	21.44	21.19	22.03	22.68	24.98	25.82	25.56	26.40	27.06
	12H	20.69	21.45	21.29	22.07	22.73	25.70	26.47	26.31	27.08	27.74
8H	4H	20.64	21.48	21.23	22.07	22.72	23.24	24.08	23.82	24.67	25.32
	6H	21.30	22.01	21.91	22.64	23.30	24.70	25.41	25.31	26.04	26.70
	8H	21.53	22.17	22.16	22.81	23.48	25.48	26.12	26.11	26.76	27.44
	12H	21.70	22.27	22.33	22.90	23.64	26.38	26.95	27.01	27.58	28.32
12H	4H	20.80	21.56	21.41	22.18	22.84	23.25	24.01	23.85	24.63	25.29
	6H	21.55	22.19	22.17	22.83	23.50	24.74	25.38	25.37	26.02	26.69
	8H	21.87	22.44	22.50	23.07	23.81	25.59	26.16	26.22	26.79	27.53