

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: P243307

Luminaire Tested: S123DRP-H560D935-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243307  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-49)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DRP-H560D935-X4F0-XX-UDD-F-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: -

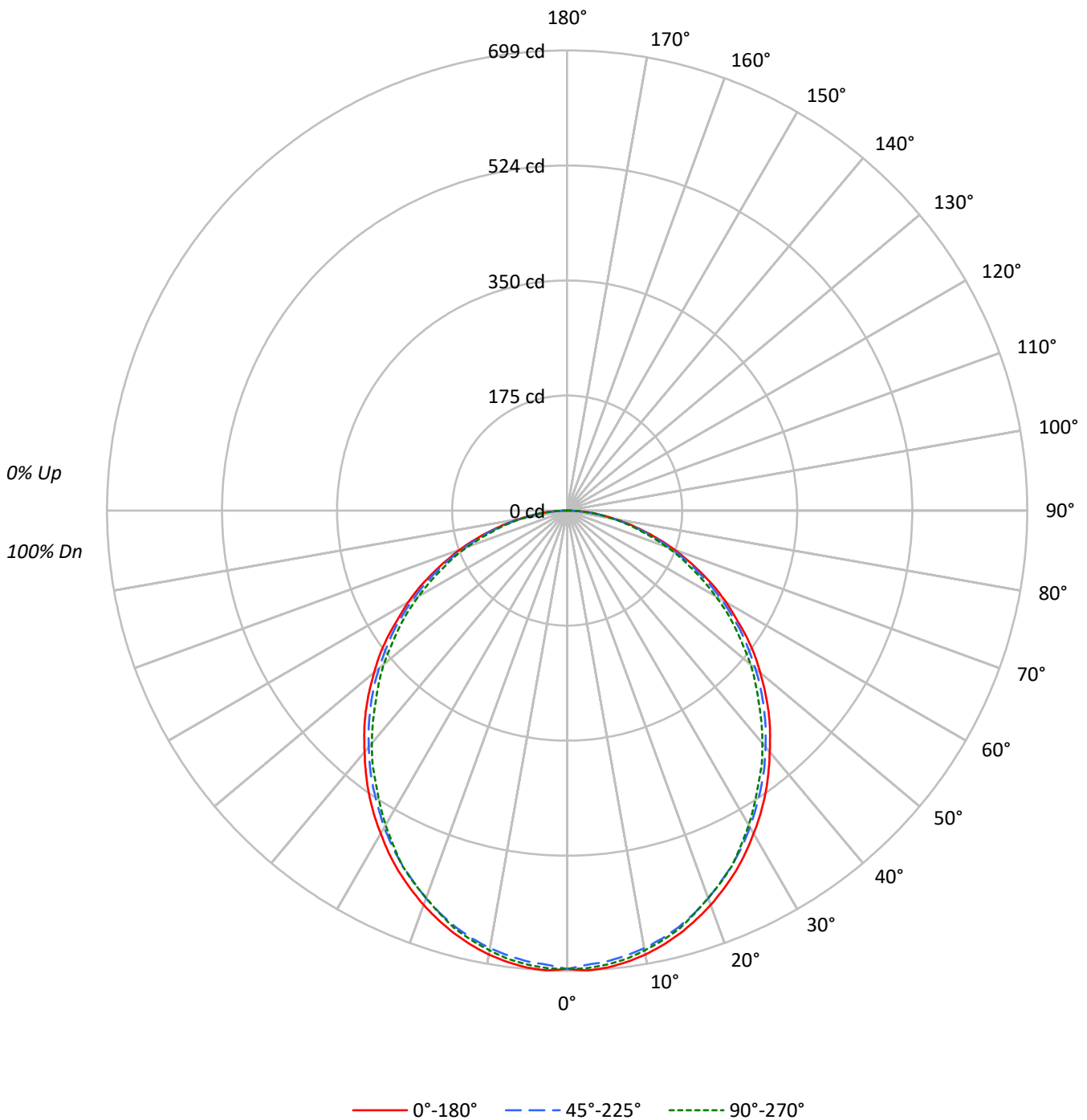
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1841.9 lumens  
Efficiency: N/A  
Efficacy: 107.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 17.2  
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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	104	100	96	106	102	98	94	97	94	91	94	91	89	90	88	86	84
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74	79	75	72	70
3	90	80	72	65	88	78	71	65	75	69	64	73	67	62	70	65	61	59
4	83	71	62	55	80	70	61	55	67	60	54	65	59	54	63	57	53	51
5	76	63	54	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44
6	70	57	48	42	69	56	48	42	54	47	41	53	46	41	51	45	41	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	34
8	61	47	39	33	59	47	39	33	45	38	33	44	37	33	43	37	32	30
9	57	44	35	30	56	43	35	30	42	35	30	41	34	29	40	34	29	27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25

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

	0°	45°	90°
0°	8440	8440	8440
5°	8480	8368	8424
10°	8429	8308	8351
15°	8341	8218	8255
20°	8226	8085	8077
25°	8091	7938	7946
30°	7930	7776	7720
35°	7772	7601	7492
40°	7575	7421	7302
45°	7419	7242	7056
50°	7220	7036	6862
55°	7012	6830	6600
60°	6764	6582	6318
65°	6470	6273	6009
70°	6145	5940	5695
75°	5700	5536	5241
80°	5131	5012	4851
85°	4784	4548	4395

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7419 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	65.7	3.6
10°-20°	185.8	10.1
20°-30°	275.0	14.9
30°-40°	322.5	17.5
40°-50°	326.1	17.7
50°-60°	288.4	15.7
60°-70°	216.6	11.8
70°-80°	124.8	6.8
80°-90°	37.0	2.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	526.5	28.6
0°-40°	849.0	46.1
0°-60°	1463.5	79.5
0°-90°	1841.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1841.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	696	696	696	696	696	
5°	697	694	688	693	692	66
15°	665	661	655	660	658	187
25°	605	600	594	596	594	279
35°	525	521	514	512	506	328
45°	433	429	422	417	412	334
55°	332	330	323	317	312	296
65°	226	224	219	213	210	224
75°	122	120	118	115	112	129
85°	34	34	33	32	32	39
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	696.3	696.3	696.3	696.3	696.3
2.5°	699.1	696.9	690.5	696.9	695.7
5°	696.9	694.0	687.7	693.4	692.3
7.5°	691.7	688.8	681.9	688.2	687.1
10°	684.8	681.9	675.0	680.2	678.5
12.5°	675.6	672.7	665.9	669.9	668.7
15°	664.7	661.3	654.9	659.5	657.8
17.5°	651.5	648.6	641.7	647.5	642.3
20°	637.7	634.9	626.8	632.0	626.2
22.5°	621.7	618.2	610.2	613.6	610.7
25°	605.0	600.4	593.5	596.4	594.1
27.5°	586.6	582.0	575.2	576.3	572.3
30°	566.6	562.5	555.6	556.8	551.6
32.5°	546.5	543.0	534.4	534.4	529.2
35°	525.2	520.6	513.7	512.0	506.3
37.5°	502.3	498.2	491.9	489.1	485.6
40°	478.7	476.4	469.0	465.5	461.5
42.5°	456.3	452.3	446.0	441.4	436.8
45°	432.8	429.4	422.5	416.7	411.6
47.5°	408.1	405.3	398.4	392.1	388.0
50°	382.9	380.6	373.1	366.2	363.9
52.5°	358.2	355.3	347.9	341.5	336.9
55°	331.8	329.5	323.2	316.9	312.3
57.5°	303.7	303.7	296.8	291.0	287.6
60°	279.0	276.1	271.5	265.2	260.6
62.5°	253.1	251.4	245.1	238.8	235.3
65°	225.6	223.9	218.7	213.0	209.5
67.5°	198.6	198.0	193.4	188.9	186.6
70°	173.4	172.2	167.6	163.0	160.7
72.5°	147.5	146.4	142.4	138.3	135.5
75°	121.7	120.5	118.2	114.8	111.9
77.5°	96.4	96.4	93.6	92.4	91.3
80°	73.5	72.9	71.8	70.6	69.5
82.5°	52.8	52.2	51.1	50.5	50.5
85°	34.4	33.9	32.7	32.1	31.6
87.5°	17.8	16.6	16.1	14.9	14.4
90°	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	18.86	20.49	19.23	20.80	21.12	18.55	20.18	18.92	20.49	20.80
	3H	20.66	22.13	21.04	22.46	22.82	20.31	21.78	20.68	22.10	22.46
	4H	21.34	22.72	21.73	23.07	23.44	20.96	22.34	21.35	22.69	23.06
	6H	21.83	23.12	22.24	23.48	23.87	21.46	22.74	21.87	23.10	23.50
	8H	22.00	23.23	22.43	23.62	24.01	21.63	22.85	22.05	23.24	23.64
	12H	22.12	23.30	22.55	23.68	24.11	21.75	22.92	22.18	23.30	23.73
4H	2H	19.45	20.84	19.85	21.19	21.56	19.21	20.59	19.60	20.94	21.31
	3H	21.48	22.64	21.89	23.04	23.44	21.18	22.34	21.59	22.74	23.14
	4H	22.29	23.34	22.72	23.75	24.19	21.96	23.01	22.39	23.42	23.86
	6H	22.92	23.84	23.37	24.28	24.73	22.59	23.51	23.04	23.95	24.41
	8H	23.14	24.00	23.60	24.44	24.90	22.81	23.67	23.27	24.11	24.58
	12H	23.31	24.08	23.79	24.56	25.03	22.98	23.75	23.46	24.23	24.70
8H	4H	22.58	23.44	23.04	23.88	24.35	22.29	23.15	22.75	23.60	24.06
	6H	23.34	24.05	23.83	24.54	25.01	23.05	23.77	23.54	24.25	24.73
	8H	23.63	24.28	24.14	24.78	25.27	23.35	23.99	23.86	24.50	24.98
	12H	23.89	24.46	24.40	24.95	25.51	23.60	24.17	24.10	24.66	25.22
12H	4H	22.61	23.39	23.09	23.86	24.33	22.33	23.11	22.81	23.58	24.05
	6H	23.39	24.04	23.90	24.54	25.03	23.12	23.76	23.62	24.27	24.75
	8H	23.75	24.32	24.25	24.81	25.37	23.47	24.04	23.98	24.53	25.09