

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: P242433

Luminaire Tested: S123DRP-S560D835-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242433  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-11)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DRP-S560D835-X4F0-XX-UDD-F-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: -

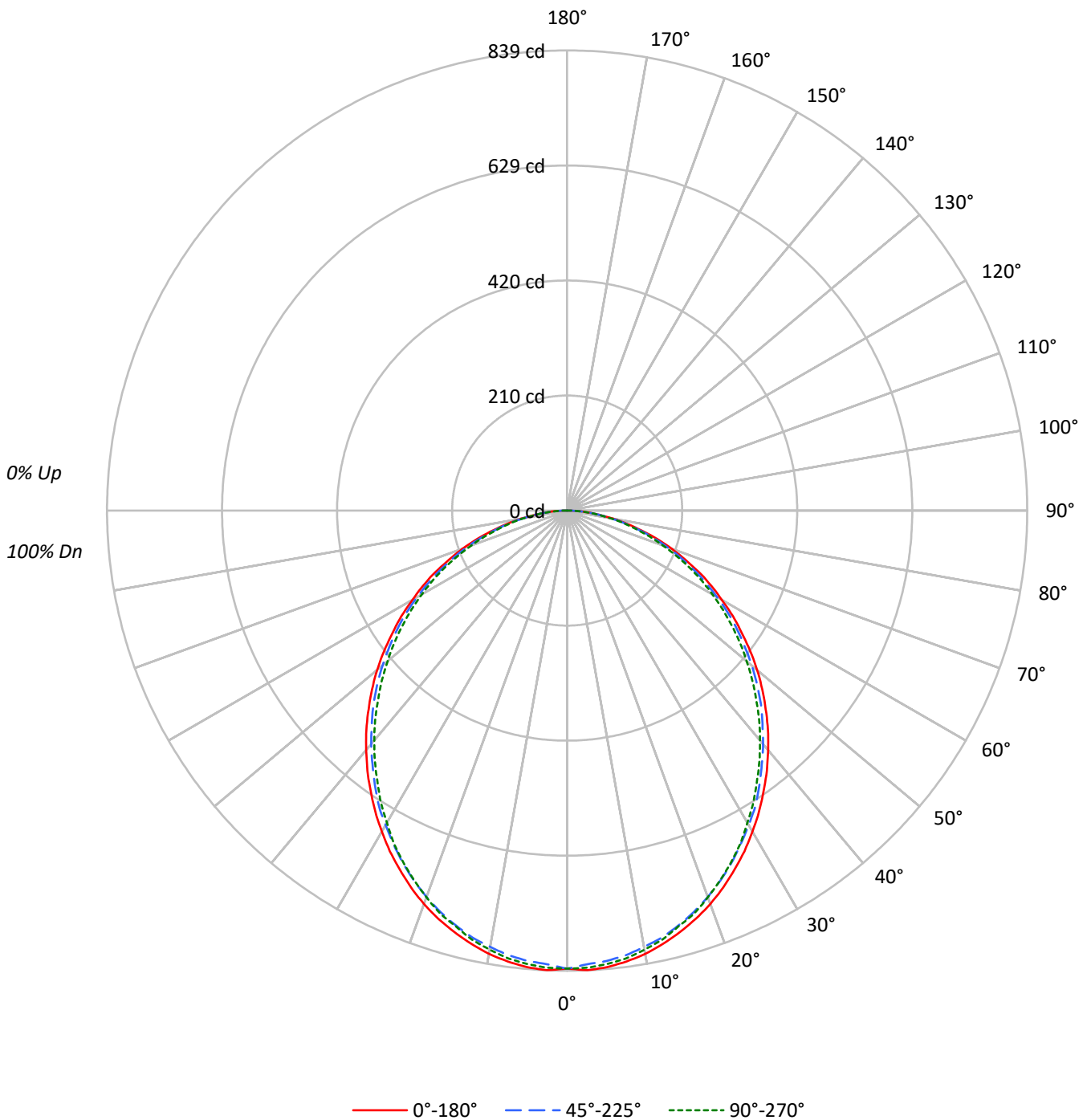
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2173.3 lumens  
Efficiency: N/A  
Efficacy: 115.6 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.3  
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 18.8  
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	95	98	94	92	94	91	89	90	88	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	70
3	91	80	72	66	88	79	71	65	76	69	64	73	67	63	70	66	62	59
4	83	71	62	56	81	70	62	55	67	60	55	65	59	54	63	58	53	51
5	76	64	55	48	74	63	54	48	60	53	47	58	52	47	57	51	46	44
6	71	57	49	42	69	56	48	42	55	47	42	53	46	41	51	46	41	39
7	66	52	43	37	64	51	43	37	50	42	37	48	42	37	47	41	36	34
8	61	48	39	33	60	47	39	33	46	38	33	44	38	33	43	37	33	31
9	57	44	36	30	56	43	35	30	42	35	30	41	34	30	40	34	30	28
10	54	40	33	27	52	40	32	27	39	32	27	38	32	27	37	31	27	25

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

	0°	45°	90°
0°	10122	10122	10122
5°	10170	10030	10099
10°	10101	9943	10004
15°	9984	9831	9848
20°	9846	9669	9678
25°	9660	9478	9460
30°	9457	9266	9196
35°	9244	9041	8924
40°	9021	8794	8657
45°	8777	8566	8357
50°	8531	8286	8056
55°	8210	7997	7754
60°	7886	7658	7416
65°	7601	7291	7064
70°	7177	6872	6567
75°	6557	6322	6051
80°	5912	5661	5612
85°	5188	4993	4798

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8777 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	78.7	3.6
10°-20°	222.3	10.2
20°-30°	328.3	15.1
30°-40°	383.4	17.6
40°-50°	385.5	17.7
50°-60°	338.6	15.6
60°-70°	252.2	11.6
70°-80°	143.5	6.6
80°-90°	40.8	1.9
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°	629.3	29.0
0°-40°	1012.7	46.6
0°-60°	1736.8	79.9
0°-90°	2173.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2173.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	835	835	835	835	835	
5°	836	832	824	832	830	79
15°	796	793	783	789	785	224
25°	722	718	709	709	707	333
35°	625	620	611	607	603	391
45°	512	509	500	491	488	395
55°	388	388	378	370	367	348
65°	265	261	254	248	246	261
75°	140	137	135	131	129	150
85°	37	36	36	34	34	43
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	835.1	835.1	835.1	835.1	835.1
2.5°	838.7	835.8	827.9	835.1	834.3
5°	835.8	832.2	824.3	831.5	830.0
7.5°	829.3	825.7	817.8	824.3	823.6
10°	820.7	817.1	807.8	814.2	812.8
12.5°	809.2	806.3	797.7	802.0	801.3
15°	795.6	792.7	783.4	789.1	784.8
17.5°	780.5	776.9	767.6	771.9	770.4
20°	763.3	759.0	749.6	752.5	750.3
22.5°	743.9	739.6	730.2	732.4	729.5
25°	722.3	718.0	708.7	709.4	707.3
27.5°	700.1	695.8	685.7	686.4	684.3
30°	675.7	672.1	662.0	662.0	657.0
32.5°	651.2	646.2	639.0	634.0	631.9
35°	624.7	620.4	611.0	606.7	603.1
37.5°	598.1	592.4	583.0	578.0	575.9
40°	570.1	565.8	555.8	550.0	547.1
42.5°	542.1	537.1	527.0	521.3	518.4
45°	512.0	509.1	499.7	491.1	487.5
47.5°	482.5	478.2	469.6	461.0	458.1
50°	452.4	448.8	439.4	431.5	427.2
52.5°	420.8	418.6	408.6	402.1	397.8
55°	388.5	387.7	378.4	370.5	366.9
57.5°	358.3	355.4	348.2	341.1	336.8
60°	325.3	324.5	315.9	309.5	305.9
62.5°	295.8	293.7	285.1	278.6	276.4
65°	265.0	261.4	254.2	248.4	246.3
67.5°	231.9	229.1	223.3	218.3	215.4
70°	202.5	198.2	193.9	188.8	185.3
72.5°	171.6	168.7	163.7	159.4	158.0
75°	140.0	137.1	135.0	131.4	129.2
77.5°	112.0	110.6	107.7	104.8	104.8
80°	84.7	82.6	81.1	80.4	80.4
82.5°	58.2	58.2	58.2	56.7	56.0
85°	37.3	35.9	35.9	34.5	34.5
87.5°	18.7	16.5	15.8	15.1	15.1
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	19.40	21.02	19.76	21.33	21.65	19.09	20.70	19.45	21.02	21.33
	3H	21.17	22.63	21.55	22.96	23.32	20.80	22.26	21.18	22.59	22.95
	4H	21.83	23.20	22.23	23.55	23.93	21.44	22.82	21.84	23.16	23.54
	6H	22.32	23.59	22.73	23.96	24.35	21.93	23.20	22.34	23.57	23.96
	8H	22.47	23.69	22.89	24.08	24.48	22.08	23.30	22.51	23.69	24.09
	12H	22.58	23.74	23.00	24.12	24.55	22.19	23.36	22.62	23.74	24.17
4H	2H	19.98	21.36	20.38	21.70	22.08	19.73	21.11	20.13	21.45	21.83
	3H	21.97	23.13	22.38	23.52	23.92	21.67	22.82	22.08	23.22	23.62
	4H	22.76	23.80	23.19	24.21	24.65	22.43	23.47	22.86	23.89	24.32
	6H	23.37	24.29	23.83	24.73	25.18	23.04	23.95	23.49	24.39	24.85
	8H	23.58	24.43	24.04	24.87	25.34	23.25	24.10	23.71	24.54	25.01
	12H	23.73	24.49	24.21	24.97	25.44	23.40	24.16	23.88	24.64	25.11
8H	4H	23.04	23.89	23.50	24.34	24.80	22.75	23.60	23.21	24.05	24.51
	6H	23.78	24.49	24.27	24.98	25.45	23.48	24.19	23.98	24.68	25.16
	8H	24.05	24.69	24.56	25.20	25.68	23.77	24.40	24.27	24.91	25.39
	12H	24.28	24.84	24.79	25.33	25.90	23.99	24.55	24.50	25.04	25.60
12H	4H	23.07	23.84	23.55	24.31	24.78	22.79	23.55	23.27	24.03	24.50
	6H	23.83	24.47	24.34	24.97	25.46	23.55	24.18	24.05	24.69	25.18
	8H	24.16	24.73	24.67	25.22	25.78	23.89	24.45	24.39	24.94	25.50