

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: P242431

Luminaire Tested: S123DRP-S1165D830-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242431  
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-S1165D830-X4F0-XX-UDD-F-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

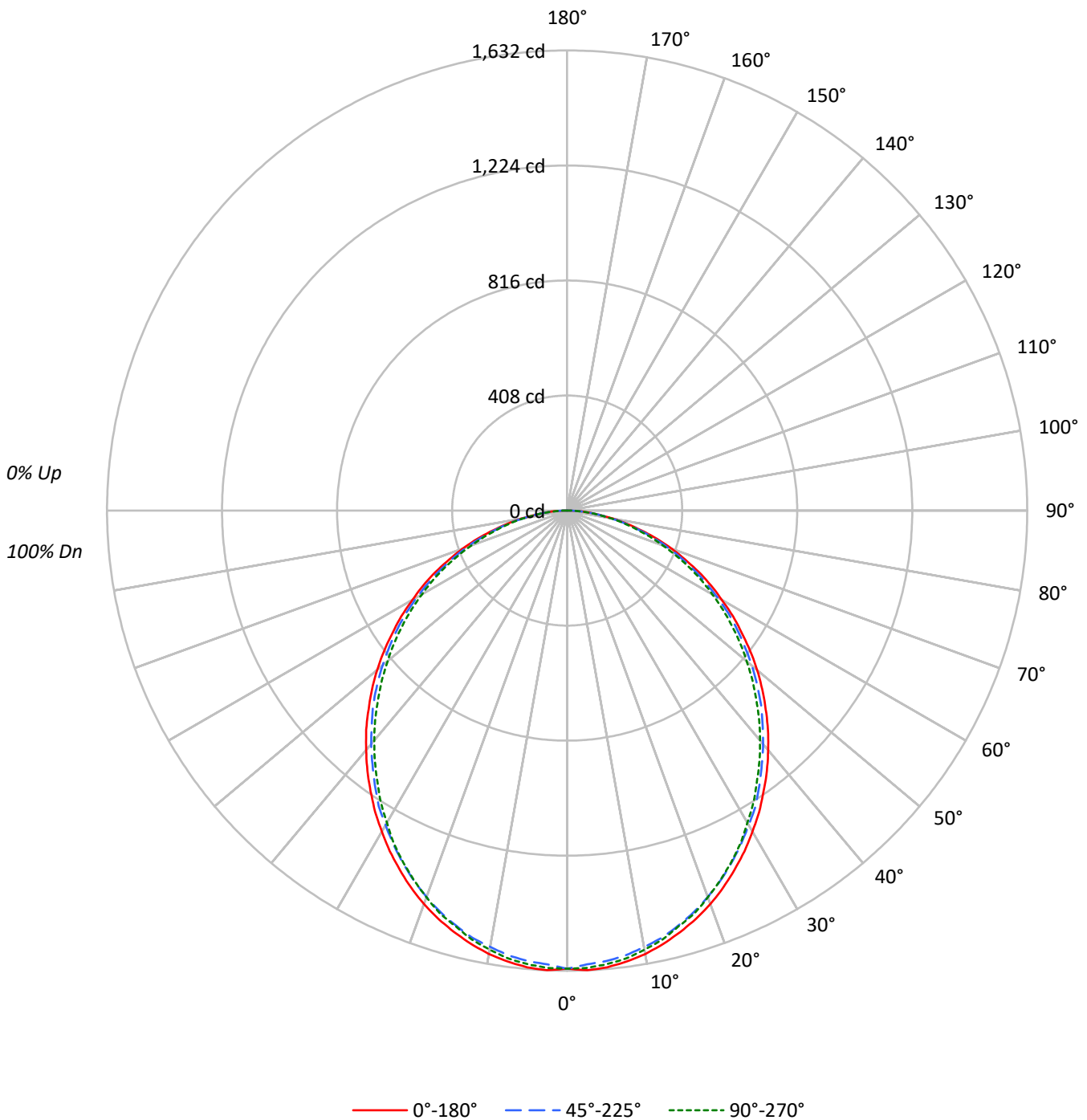
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4228.2 lumens  
Efficiency: N/A  
Efficacy: 102.9 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): 41.1  
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	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°	19692	19692	19692
5°	19784	19513	19648
10°	19653	19342	19463
15°	19423	19124	19160
20°	19154	18812	18830
25°	18795	18440	18403
30°	18398	18027	17890
35°	17983	17591	17363
40°	17551	17108	16844
45°	17073	16667	16259
50°	16596	16121	15674
55°	15970	15558	15085
60°	15341	14899	14427
65°	14785	14183	13741
70°	13960	13368	12773
75°	12757	12298	11774
80°	11504	11022	10924
85°	10097	9707	9332

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 17073 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	153.2	3.6
10°-20°	432.5	10.2
20°-30°	638.7	15.1
30°-40°	746.0	17.6
40°-50°	749.9	17.7
50°-60°	658.8	15.6
60°-70°	490.6	11.6
70°-80°	279.2	6.6
80°-90°	79.4	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°	1224.3	29.0
0°-40°	1970.3	46.6
0°-60°	3379.0	79.9
0°-90°	4228.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4228.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1625	1625	1625	1625	1625	
5°	1626	1619	1604	1618	1615	154
15°	1548	1542	1524	1535	1527	436
25°	1405	1397	1379	1380	1376	647
35°	1215	1207	1189	1180	1173	760
45°	996	990	972	956	948	769
55°	756	754	736	721	714	677
65°	516	508	494	483	479	509
75°	272	267	263	256	251	291
85°	73	70	70	67	67	83
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1624.6	1624.6	1624.6	1624.6	1624.6
2.5°	1631.6	1626.0	1610.6	1624.6	1623.2
5°	1626.0	1619.0	1603.7	1617.6	1614.8
7.5°	1613.4	1606.5	1591.1	1603.7	1602.3
10°	1596.7	1589.7	1571.5	1584.1	1581.3
12.5°	1574.3	1568.7	1552.0	1560.4	1559.0
15°	1547.8	1542.2	1524.0	1535.2	1526.8
17.5°	1518.5	1511.5	1493.3	1501.7	1498.9
20°	1484.9	1476.5	1458.4	1464.0	1459.8
22.5°	1447.2	1438.8	1420.7	1424.9	1419.3
25°	1405.3	1396.9	1378.8	1380.2	1376.0
27.5°	1362.0	1353.6	1334.1	1335.5	1331.3
30°	1314.5	1307.5	1288.0	1288.0	1278.2
32.5°	1267.0	1257.2	1243.3	1233.5	1229.3
35°	1215.3	1206.9	1188.8	1180.4	1173.4
37.5°	1163.6	1152.5	1134.3	1124.5	1120.3
40°	1109.2	1100.8	1081.2	1070.0	1064.5
42.5°	1054.7	1044.9	1025.3	1014.2	1008.6
45°	996.0	990.4	972.3	955.5	948.5
47.5°	938.7	930.3	913.6	896.8	891.2
50°	880.1	873.1	854.9	839.5	831.2
52.5°	818.6	814.4	794.8	782.3	773.9
55°	755.7	754.3	736.2	720.8	713.8
57.5°	697.1	691.5	677.5	663.5	655.2
60°	632.8	631.4	614.6	602.1	595.1
62.5°	575.5	571.3	554.6	542.0	537.8
65°	515.5	508.5	494.5	483.3	479.1
67.5°	451.2	445.6	434.4	424.7	419.1
70°	393.9	385.5	377.2	367.4	360.4
72.5°	333.9	328.3	318.5	310.1	307.3
75°	272.4	266.8	262.6	255.6	251.4
77.5°	217.9	215.1	209.5	204.0	204.0
80°	164.8	160.6	157.9	156.5	156.5
82.5°	113.2	113.2	113.2	110.4	109.0
85°	72.6	69.8	69.8	67.1	67.1
87.5°	36.3	32.1	30.7	29.3	29.3
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	21.71	23.33	22.08	23.65	23.96	21.40	23.02	21.76	23.33	23.64
	3H	23.48	24.94	23.86	25.27	25.63	23.11	24.58	23.49	24.90	25.26
	4H	24.14	25.52	24.54	25.87	26.24	23.75	25.13	24.15	25.48	25.85
	6H	24.63	25.90	25.04	26.27	26.66	24.24	25.51	24.65	25.88	26.27
	8H	24.78	26.00	25.21	26.39	26.79	24.40	25.62	24.82	26.00	26.40
	12H	24.89	26.06	25.32	26.44	26.87	24.50	25.67	24.93	26.05	26.48
4H	2H	22.29	23.67	22.69	24.02	24.39	22.04	23.42	22.44	23.77	24.14
	3H	24.28	25.44	24.69	25.84	26.24	23.98	25.13	24.39	25.53	25.93
	4H	25.07	26.11	25.50	26.53	26.96	24.74	25.78	25.17	26.20	26.63
	6H	25.69	26.60	26.14	27.04	27.50	25.35	26.26	25.81	26.71	27.16
	8H	25.89	26.74	26.35	27.18	27.65	25.56	26.41	26.02	26.86	27.32
	12H	26.04	26.81	26.52	27.28	27.75	25.71	26.48	26.19	26.95	27.42
8H	4H	25.35	26.21	25.81	26.65	27.11	25.06	25.92	25.52	26.36	26.82
	6H	26.09	26.80	26.58	27.29	27.76	25.80	26.51	26.29	27.00	27.47
	8H	26.36	27.00	26.87	27.51	27.99	26.08	26.72	26.59	27.22	27.71
	12H	26.59	27.16	27.10	27.65	28.21	26.30	26.87	26.81	27.36	27.92
12H	4H	25.38	26.15	25.86	26.62	27.09	25.10	25.87	25.58	26.34	26.81
	6H	26.14	26.78	26.65	27.29	27.77	25.86	26.50	26.37	27.00	27.49
	8H	26.47	27.04	26.98	27.53	28.09	26.20	26.76	26.71	27.25	27.81