

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: P242445

Luminaire Tested: S123DRP-S1165D930-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242445  
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-S1165D930-X4F0-XX-UDD-F-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

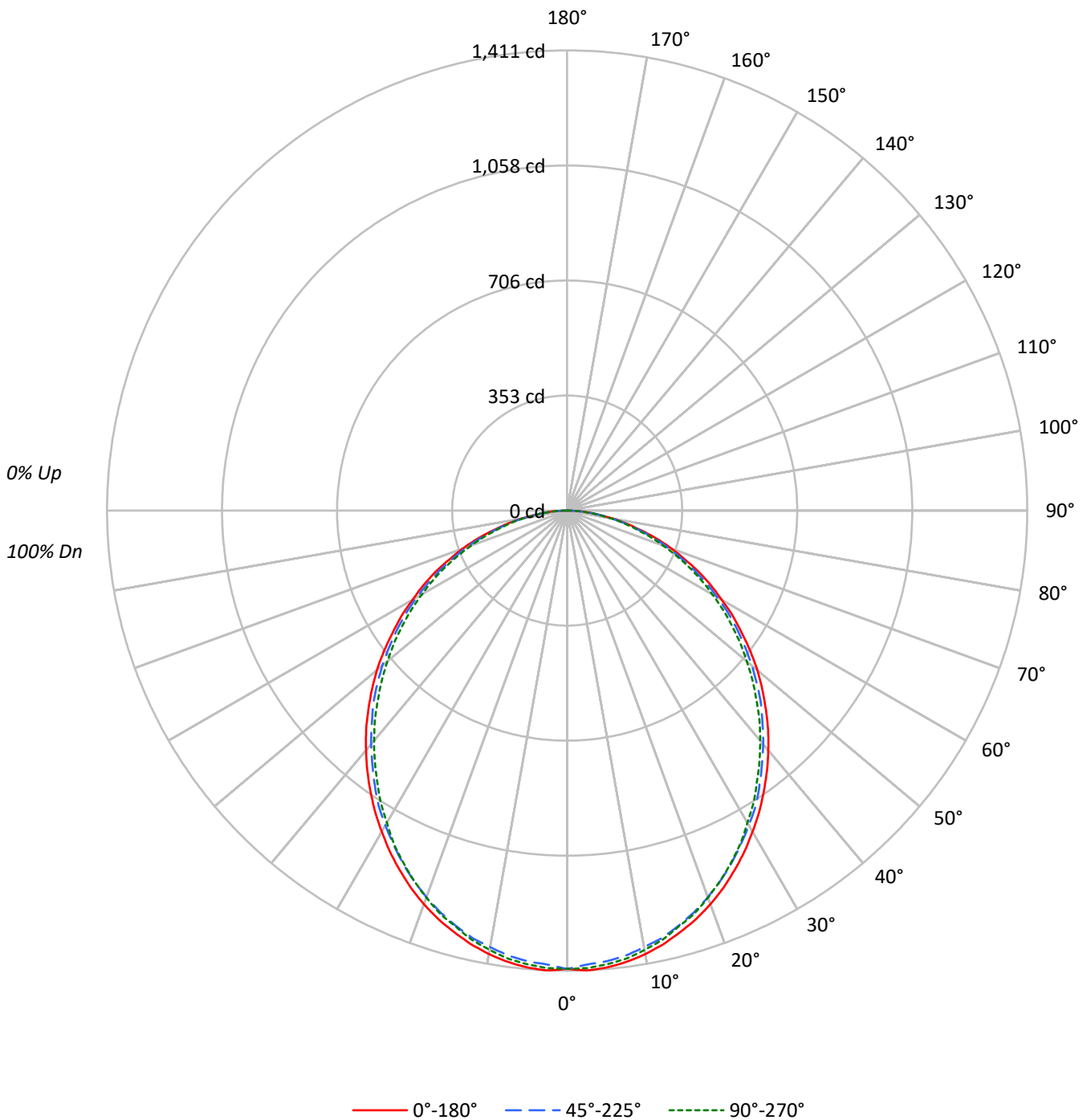
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3657.4 lumens  
Efficiency: N/A  
Efficacy: 89.0 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

TEST NUMBER: P242445

CATALOG NUMBER: S123DRP-S1165D930-X4F0-XX-UDD-F-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	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°	17034	17034	17034
5°	17114	16879	16996
10°	16999	16732	16835
15°	16800	16543	16573
20°	16569	16272	16288
25°	16258	15950	15918
30°	15914	15593	15474
35°	15556	15216	15019
40°	15181	14799	14570
45°	14768	14416	14065
50°	14356	13945	13558
55°	13814	13457	13049
60°	13270	12890	12480
65°	12789	12270	11888
70°	12078	11564	11050
75°	11034	10640	10186
80°	9954	9528	9444
85°	8734	8400	8066

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 14768 cd/sqm

TEST NUMBER: P242445

CATALOG NUMBER: S123DRP-S1165D930-X4F0-XX-UDD-F-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	132.5	3.6
10°-20°	374.1	10.2
20°-30°	552.5	15.1
30°-40°	645.3	17.6
40°-50°	648.7	17.7
50°-60°	569.8	15.6
60°-70°	424.4	11.6
70°-80°	241.5	6.6
80°-90°	68.7	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°	1059.1	29.0
0°-40°	1704.3	46.6
0°-60°	2922.8	79.9
0°-90°	3657.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3657.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1405	1405	1405	1405	1405	
5°	1406	1400	1387	1399	1397	133
15°	1339	1334	1318	1328	1321	378
25°	1216	1208	1193	1194	1190	560
35°	1051	1044	1028	1021	1015	658
45°	862	857	841	826	820	665
55°	654	652	637	624	618	586
65°	446	440	428	418	414	440
75°	236	231	227	221	218	252
85°	63	60	60	58	58	72
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1405.3	1405.3	1405.3	1405.3	1405.3
2.5°	1411.3	1406.5	1393.2	1405.3	1404.1
5°	1406.5	1400.5	1387.2	1399.3	1396.8
7.5°	1395.6	1389.6	1376.3	1387.2	1386.0
10°	1381.1	1375.1	1359.4	1370.3	1367.8
12.5°	1361.8	1357.0	1342.5	1349.7	1348.5
15°	1338.8	1334.0	1318.3	1328.0	1320.7
17.5°	1313.5	1307.4	1291.7	1299.0	1296.5
20°	1284.5	1277.2	1261.5	1266.3	1262.7
22.5°	1251.8	1244.6	1228.9	1232.5	1227.7
25°	1215.6	1208.3	1192.6	1193.8	1190.2
27.5°	1178.1	1170.9	1154.0	1155.2	1151.5
30°	1137.0	1131.0	1114.1	1114.1	1105.6
32.5°	1096.0	1087.5	1075.4	1067.0	1063.3
35°	1051.3	1044.0	1028.3	1021.0	1015.0
37.5°	1006.5	996.9	981.2	972.7	969.1
40°	959.4	952.2	935.3	925.6	920.8
42.5°	912.3	903.8	886.9	877.3	872.4
45°	861.5	856.7	841.0	826.5	820.5
47.5°	812.0	804.8	790.3	775.8	770.9
50°	761.3	755.2	739.5	726.2	719.0
52.5°	708.1	704.5	687.5	676.7	669.4
55°	653.7	652.5	636.8	623.5	617.5
57.5°	603.0	598.1	586.0	574.0	566.7
60°	547.4	546.2	531.7	520.8	514.8
62.5°	497.8	494.2	479.7	468.8	465.2
65°	445.9	439.8	427.8	418.1	414.5
67.5°	390.3	385.5	375.8	367.3	362.5
70°	340.8	333.5	326.3	317.8	311.8
72.5°	288.8	284.0	275.5	268.3	265.8
75°	235.6	230.8	227.2	221.1	217.5
77.5°	188.5	186.1	181.3	176.4	176.4
80°	142.6	139.0	136.5	135.3	135.3
82.5°	97.9	97.9	97.9	95.5	94.3
85°	62.8	60.4	60.4	58.0	58.0
87.5°	31.4	27.8	26.6	25.4	25.4
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	21.21	22.83	21.57	23.14	23.46	20.89	22.51	21.26	22.83	23.14
	3H	22.98	24.44	23.36	24.77	25.13	22.61	24.07	22.99	24.40	24.76
	4H	23.64	25.01	24.03	25.36	25.74	23.25	24.62	23.65	24.97	25.35
	6H	24.12	25.40	24.54	25.77	26.16	23.73	25.01	24.14	25.37	25.77
	8H	24.28	25.50	24.70	25.89	26.28	23.89	25.11	24.32	25.50	25.90
	12H	24.38	25.55	24.81	25.93	26.36	24.00	25.17	24.43	25.55	25.98
4H	2H	21.79	23.16	22.19	23.51	23.89	21.54	22.92	21.94	23.26	23.64
	3H	23.78	24.93	24.19	25.33	25.73	23.47	24.63	23.88	25.03	25.43
	4H	24.56	25.61	25.00	26.02	26.46	24.24	25.28	24.67	25.69	26.13
	6H	25.18	26.10	25.64	26.54	26.99	24.85	25.76	25.30	26.20	26.66
	8H	25.38	26.24	25.84	26.68	27.15	25.06	25.91	25.52	26.35	26.82
	12H	25.54	26.30	26.02	26.78	27.25	25.21	25.97	25.69	26.45	26.92
8H	4H	24.85	25.70	25.31	26.15	26.61	24.56	25.41	25.02	25.85	26.32
	6H	25.59	26.30	26.08	26.78	27.26	25.29	26.00	25.79	26.49	26.97
	8H	25.86	26.50	26.37	27.00	27.49	25.57	26.21	26.08	26.72	27.20
	12H	26.09	26.65	26.60	27.14	27.70	25.80	26.36	26.30	26.85	27.41
12H	4H	24.88	25.65	25.36	26.12	26.59	24.60	25.36	25.08	25.84	26.31
	6H	25.64	26.28	26.15	26.78	27.27	25.35	25.99	25.86	26.50	26.98
	8H	25.97	26.53	26.48	27.02	27.58	25.69	26.26	26.20	26.75	27.31