

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: P243315

Luminaire Tested: S123DRP-H1165D940-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243315  
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-H1165D940-X4F0-XX-UDD-F-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

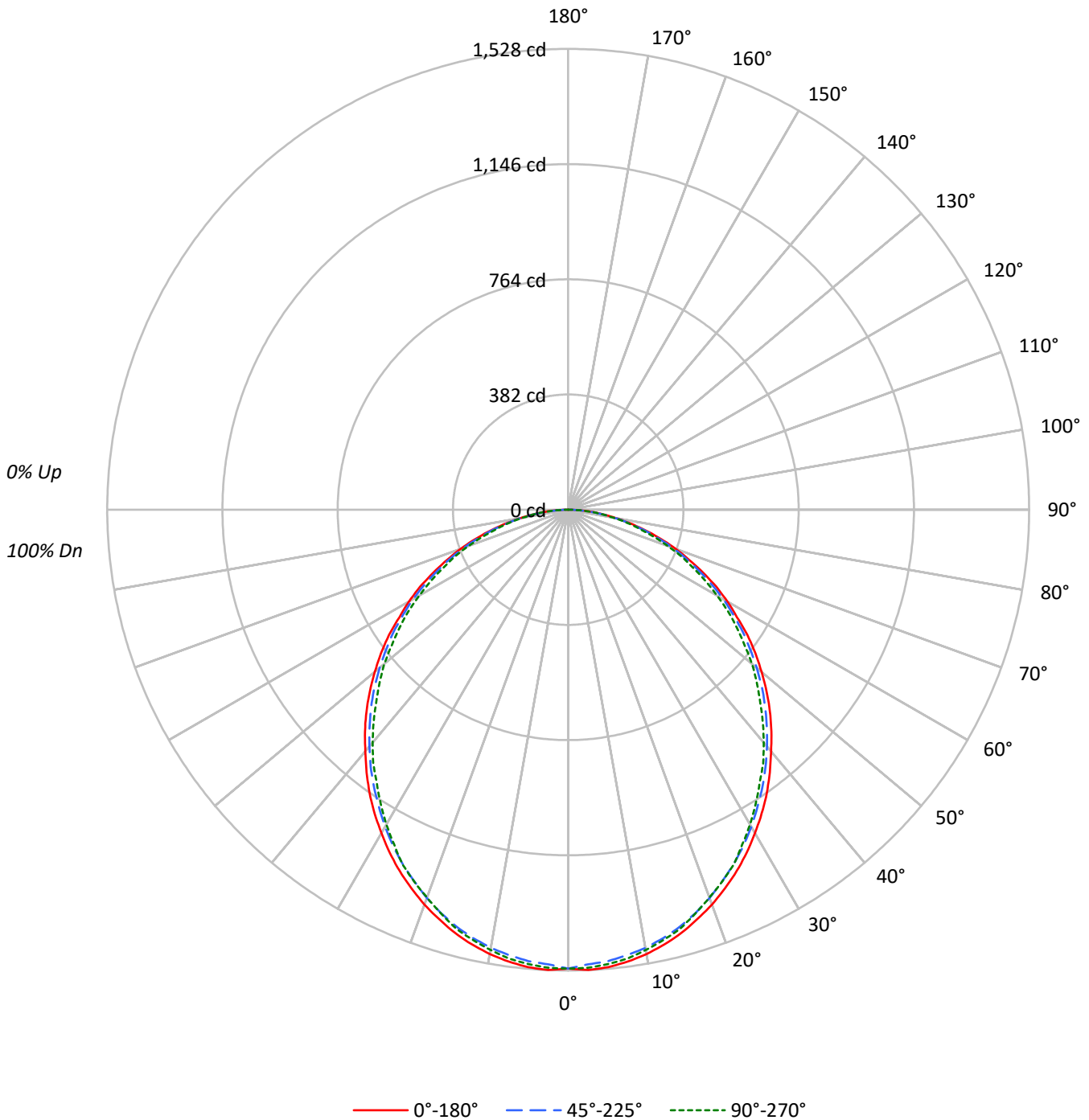
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4024.9 lumens  
Efficiency: N/A  
Efficacy: 106.8 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): 37.7  
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	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°	18442	18442	18442
5°	18527	18283	18406
10°	18418	18156	18248
15°	18227	17960	18038
20°	17975	17668	17651
25°	17681	17345	17363
30°	17328	16994	16871
35°	16983	16611	16370
40°	16553	16216	15958
45°	16211	15825	15416
50°	15776	15374	14995
55°	15321	14924	14419
60°	14778	14383	13806
65°	14137	13707	13130
70°	13425	12982	12447
75°	12453	12102	11455
80°	11203	10945	10596
85°	10472	9944	9596

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 16211 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	143.5	3.6
10°-20°	405.9	10.1
20°-30°	601.0	14.9
30°-40°	704.8	17.5
40°-50°	712.5	17.7
50°-60°	630.2	15.7
60°-70°	473.3	11.8
70°-80°	272.8	6.8
80°-90°	80.9	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°	1150.4	28.6
0°-40°	1855.2	46.1
0°-60°	3197.9	79.5
0°-90°	4024.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4024.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1522	1522	1522	1522	1522	
5°	1523	1516	1503	1515	1513	144
15°	1452	1445	1431	1441	1437	409
25°	1322	1312	1297	1303	1298	609
35°	1148	1138	1123	1119	1106	717
45°	946	938	923	911	899	729
55°	725	720	706	692	682	647
65°	493	489	478	465	458	488
75°	266	263	258	251	245	282
85°	75	74	72	70	69	84
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1521.5	1521.5	1521.5	1521.5	1521.5
2.5°	1527.7	1522.7	1508.9	1522.7	1520.2
5°	1522.7	1516.4	1502.6	1515.2	1512.7
7.5°	1511.4	1505.2	1490.1	1503.9	1501.4
10°	1496.4	1490.1	1475.1	1486.3	1482.6
12.5°	1476.3	1470.0	1455.0	1463.8	1461.3
15°	1452.5	1444.9	1431.2	1441.2	1437.4
17.5°	1423.6	1417.4	1402.3	1414.8	1403.6
20°	1393.5	1387.3	1369.7	1381.0	1368.4
22.5°	1358.4	1350.9	1333.3	1340.8	1334.6
25°	1322.0	1312.0	1296.9	1303.2	1298.2
27.5°	1281.9	1271.9	1256.8	1259.3	1250.5
30°	1238.0	1229.2	1214.2	1216.7	1205.4
32.5°	1194.1	1186.6	1167.8	1167.8	1156.5
35°	1147.7	1137.6	1122.6	1118.8	1106.3
37.5°	1097.5	1088.7	1074.9	1068.7	1061.1
40°	1046.1	1041.1	1024.8	1017.2	1008.5
42.5°	997.2	988.4	974.6	964.6	954.5
45°	945.7	938.2	923.2	910.6	899.3
47.5°	891.8	885.5	870.5	856.7	847.9
50°	836.6	831.6	815.3	800.2	795.2
52.5°	782.7	776.4	760.1	746.3	736.3
55°	725.0	720.0	706.2	692.4	682.3
57.5°	663.5	663.5	648.5	635.9	628.4
60°	609.6	603.3	593.3	579.5	569.5
62.5°	553.1	549.4	535.6	521.8	514.3
65°	492.9	489.2	477.9	465.3	457.8
67.5°	434.0	432.7	422.7	412.7	407.6
70°	378.8	376.3	366.3	356.2	351.2
72.5°	322.4	319.8	311.1	302.3	296.0
75°	265.9	263.4	258.4	250.9	244.6
77.5°	210.7	210.7	204.5	201.9	199.4
80°	160.5	159.3	156.8	154.3	151.8
82.5°	115.4	114.1	111.6	110.4	110.4
85°	75.3	74.0	71.5	70.2	69.0
87.5°	38.9	36.4	35.1	32.6	31.4
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	21.58	23.20	21.94	23.52	23.83	21.27	22.89	21.63	23.21	23.52
	3H	23.37	24.84	23.75	25.17	25.53	23.02	24.49	23.40	24.82	25.18
	4H	24.05	25.44	24.45	25.78	26.16	23.67	25.06	24.07	25.40	25.78
	6H	24.55	25.83	24.96	26.20	26.59	24.17	25.46	24.58	25.82	26.21
	8H	24.72	25.94	25.14	26.33	26.73	24.34	25.57	24.77	25.96	26.36
	12H	24.84	26.02	25.27	26.40	26.83	24.46	25.64	24.89	26.02	26.45
4H	2H	22.17	23.55	22.57	23.90	24.28	21.92	23.31	22.32	23.65	24.03
	3H	24.19	25.35	24.60	25.75	26.15	23.90	25.06	24.31	25.46	25.86
	4H	25.00	26.05	25.43	26.47	26.90	24.68	25.73	25.11	26.14	26.58
	6H	25.63	26.55	26.09	26.99	27.45	25.31	26.23	25.76	26.67	27.12
	8H	25.85	26.71	26.31	27.15	27.62	25.53	26.39	25.99	26.83	27.29
	12H	26.03	26.80	26.51	27.27	27.74	25.70	26.47	26.17	26.94	27.41
8H	4H	25.30	26.16	25.76	26.60	27.06	25.01	25.87	25.47	26.31	26.78
	6H	26.05	26.77	26.55	27.26	27.73	25.77	26.48	26.26	26.97	27.44
	8H	26.35	26.99	26.86	27.50	27.98	26.06	26.71	26.57	27.21	27.70
	12H	26.61	27.18	27.11	27.67	28.23	26.31	26.88	26.82	27.37	27.93
12H	4H	25.33	26.10	25.81	26.58	27.05	25.05	25.82	25.53	26.30	26.77
	6H	26.11	26.75	26.62	27.26	27.74	25.83	26.48	26.34	26.98	27.47
	8H	26.46	27.03	26.97	27.52	28.08	26.19	26.76	26.70	27.25	27.81