

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: P243355

Luminaire Tested: S123DRP-H1165D927-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243355  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-54)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DRP-H1165D927-X4F0-XX-UDD-D-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: -

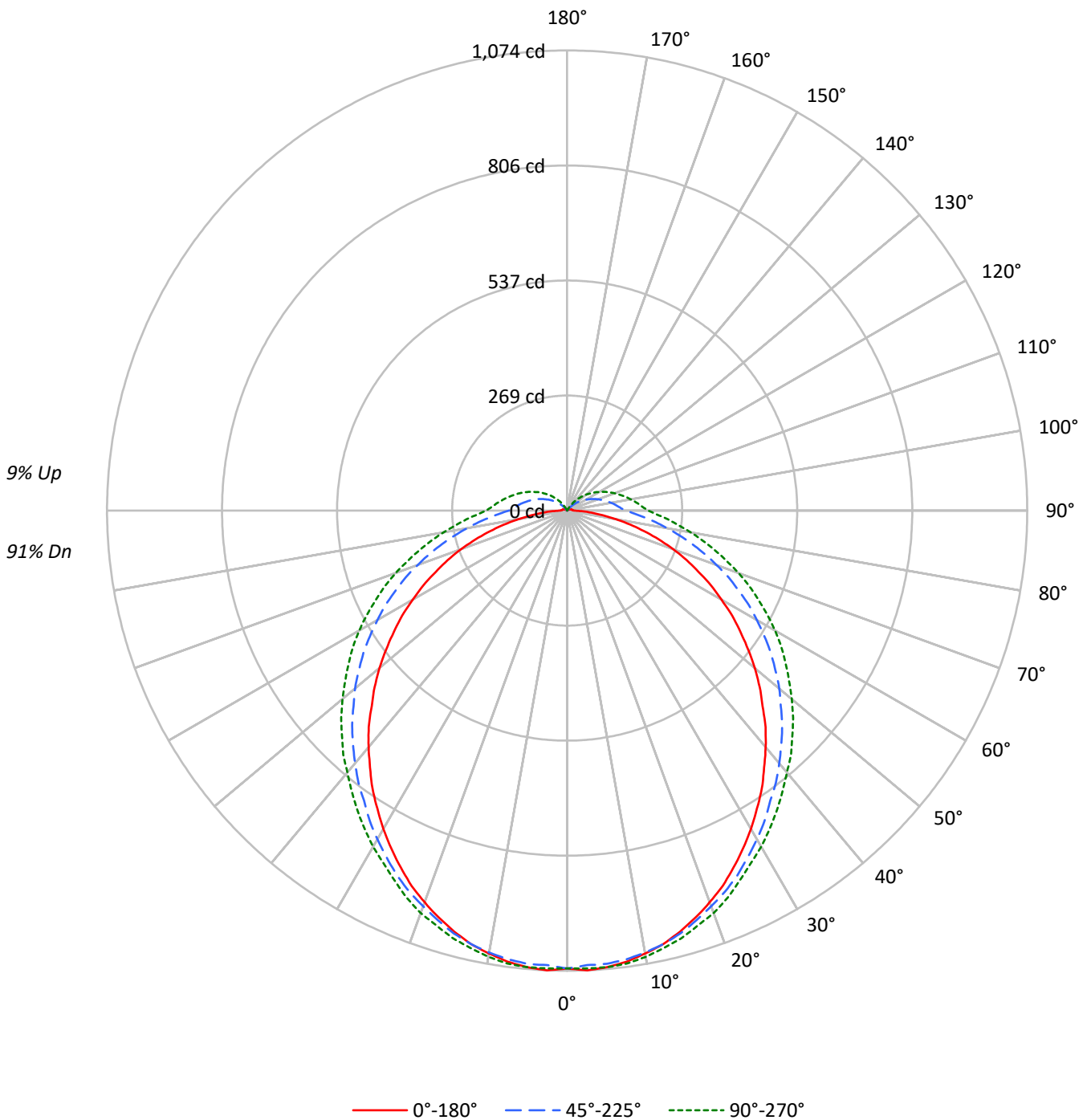
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3627.0 lumens  
Efficiency: N/A  
Efficacy: 96.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')  
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	50	30	10	0	
RCR																						
0	117	117	117	117	113	113	113	113	106	106	106	100	100	100	94	94	94	94	94	94	91	
1	105	100	95	90	101	96	92	88	91	87	84	85	82	80	80	78	76	76	76	76	73	
2	95	86	79	72	91	83	77	71	78	73	68	74	69	65	69	66	62	62	62	62	60	
3	86	75	66	60	83	73	65	58	69	62	56	65	59	54	61	56	52	52	52	52	50	
4	79	66	57	50	76	64	56	49	61	53	48	57	51	46	54	49	45	45	45	45	42	
5	72	59	50	43	70	57	49	42	54	47	41	51	45	40	49	43	39	39	39	39	36	
6	67	53	44	37	64	52	43	37	49	41	36	46	40	35	44	38	34	34	34	34	31	
7	62	48	39	33	60	47	38	32	44	37	32	42	36	31	40	34	30	30	30	30	28	
8	57	44	35	29	55	43	34	29	41	33	28	39	32	27	37	31	27	27	27	27	25	
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	28	24	24	24	24	22	
10	50	37	29	24	49	36	29	23	35	28	23	33	27	22	32	26	22	22	22	22	20	

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

	0°	45°	90°
0°	12953	12953	12953
5°	12991	12620	12614
10°	12871	12301	12232
15°	12694	11950	11812
20°	12451	11534	11386
25°	12173	11148	10894
30°	11862	10715	10479
35°	11550	10275	10068
40°	11205	9918	9672
45°	10827	9563	9343
50°	10509	9201	9001
55°	10120	8832	8664
60°	9713	8426	8337
65°	9286	7991	7937
70°	8801	7523	7547
75°	8068	7014	7085
80°	7142	6510	6681
85°	6341	6104	6371

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 10827 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	101.4	2.8
10°-20°	289.3	8.0
20°-30°	433.2	11.9
30°-40°	518.3	14.3
40°-50°	543.5	15.0
50°-60°	511.0	14.1
60°-70°	427.6	11.8
70°-80°	306.9	8.5
80°-90°	183.8	5.1
90°-100°	116.5	3.2
100°-110°	85.9	2.4
110°-120°	57.5	1.6
120°-130°	33.2	0.9
130°-140°	15.3	0.4
140°-150°	3.5	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	823.9	22.7
0°-40°	1342.2	37.0
0°-60°	2396.7	66.1
0°-90°	3315.1	91.4
90°-120°	259.9	7.2
90°-150°	311.8	8.6
90°-180°	312.0	8.6
0°-180°	3627.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1069	1069	1069	1069	1069	
5°	1070	1069	1062	1071	1070	101
15°	1017	1024	1022	1035	1033	287
25°	919	932	939	954	953	423
35°	792	811	827	848	854	495
45°	645	678	710	734	743	499
55°	494	535	580	612	623	442
65°	339	389	441	480	492	336
75°	186	243	302	343	357	198
85°	57	116	180	222	236	58
90°	16	74	136	177	189	11
95°	12	60	118	156	168	10
105°	9	39	90	124	134	10
115°	6	20	64	92	102	6
125°	4	4	39	64	72	4
135°	2	1	17	37	44	2
145°	1	0	0	11	16	1
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1068.6	1068.6	1068.6	1068.6	1068.6
2.5°	1074.2	1070.8	1061.9	1072.0	1069.7
5°	1069.7	1068.6	1061.9	1070.8	1069.7
7.5°	1061.9	1061.9	1056.4	1066.4	1066.4
10°	1049.7	1053.0	1047.4	1058.6	1057.5
12.5°	1036.3	1040.8	1036.3	1048.6	1045.2
15°	1017.4	1024.0	1021.8	1035.2	1033.0
17.5°	996.2	1004.0	1002.9	1016.2	1015.1
20°	972.8	982.8	982.8	996.2	999.5
22.5°	948.3	959.4	962.8	976.1	978.4
25°	919.3	931.6	939.4	953.8	952.7
27.5°	889.2	903.7	912.6	928.2	928.2
30°	858.0	874.7	885.9	902.6	905.9
32.5°	824.6	844.6	858.0	875.8	880.3
35°	792.3	811.2	826.8	848.0	853.6
37.5°	755.5	778.9	800.1	822.4	825.7
40°	720.9	746.6	770.0	793.4	797.8
42.5°	685.3	712.0	739.9	763.3	773.3
45°	645.2	677.5	709.8	734.3	743.2
47.5°	609.5	641.8	676.4	705.3	715.4
50°	571.6	605.1	646.3	674.1	684.2
52.5°	532.6	569.4	612.9	642.9	653.0
55°	493.6	534.9	580.5	611.7	622.9
57.5°	456.9	498.1	546.0	580.5	592.8
60°	415.6	461.3	511.5	547.1	560.5
62.5°	378.9	425.7	478.0	513.7	527.1
65°	338.7	388.9	441.3	480.3	492.5
67.5°	302.0	351.0	407.8	446.8	460.2
70°	263.0	314.2	371.1	411.2	425.7
72.5°	224.0	278.6	336.5	377.7	390.0
75°	186.1	242.9	302.0	343.2	356.6
77.5°	150.4	207.3	268.5	309.8	324.3
80°	114.8	173.8	237.3	278.6	293.1
82.5°	83.6	143.7	208.4	248.5	261.9
85°	56.8	115.9	180.5	221.7	236.2
87.5°	33.4	93.6	156.0	197.2	209.5
90°	15.6	73.5	135.9	177.2	189.4
92.5°	14.5	65.7	125.9	164.9	177.2
95°	12.3	60.2	118.1	156.0	168.3
97.5°	12.3	54.6	111.4	148.2	159.3
100°	11.1	49.0	104.7	139.3	150.4
102.5°	10.0	43.5	96.9	131.5	142.6
105°	8.9	39.0	90.3	123.7	133.7
107.5°	7.8	33.4	83.6	115.9	125.9
110°	7.8	29.0	76.9	108.1	118.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	6.7	24.5	70.2	100.3	110.3
115°	5.6	20.1	63.5	92.5	102.5
117.5°	5.6	15.6	56.8	85.8	94.7
120°	5.6	12.3	51.3	78.0	86.9
122.5°	4.5	7.8	45.7	71.3	80.2
125°	4.5	4.5	39.0	63.5	72.4
127.5°	3.3	2.2	33.4	56.8	64.6
130°	3.3	2.2	27.9	50.1	57.9
132.5°	2.2	2.2	22.3	43.5	51.3
135°	2.2	1.1	16.7	36.8	43.5
137.5°	2.2	1.1	11.1	30.1	36.8
140°	1.1	1.1	5.6	23.4	30.1
142.5°	1.1	0.0	1.1	17.8	23.4
145°	1.1	0.0	0.0	11.1	15.6
147.5°	1.1	0.0	0.0	5.6	10.0
150°	1.1	0.0	0.0	0.0	3.3
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	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	17.93	19.44	18.43	19.92	20.44	20.00	21.50	20.49	21.99	22.51
	3H	19.49	20.86	19.99	21.35	21.91	22.40	23.77	22.90	24.26	24.82
	4H	20.01	21.31	20.54	21.82	22.40	23.51	24.81	24.04	25.32	25.90
	6H	20.35	21.56	20.89	22.08	22.68	24.64	25.85	25.18	26.37	26.96
	8H	20.44	21.60	20.99	22.14	22.74	25.20	26.36	25.75	26.91	27.50
	12H	20.49	21.60	21.04	22.14	22.76	25.82	26.93	26.38	27.47	28.10
4H	2H	18.85	20.15	19.38	20.66	21.23	20.45	21.75	20.98	22.26	22.84
	3H	20.65	21.76	21.19	22.31	22.91	23.06	24.17	23.60	24.72	25.32
	4H	21.32	22.33	21.88	22.90	23.52	24.34	25.35	24.90	25.91	26.54
	6H	21.79	22.68	22.37	23.27	23.91	25.64	26.53	26.22	27.12	27.76
	8H	21.93	22.77	22.51	23.35	24.01	26.30	27.14	26.88	27.73	28.38
	12H	22.01	22.77	22.62	23.39	24.05	27.03	27.79	27.63	28.41	29.07
8H	4H	21.97	22.81	22.55	23.39	24.05	24.56	25.40	25.15	25.99	26.64
	6H	22.62	23.33	23.24	23.96	24.62	26.02	26.73	26.64	27.36	28.02
	8H	22.85	23.50	23.48	24.13	24.81	26.81	27.45	27.43	28.09	28.76
	12H	23.02	23.60	23.65	24.22	24.96	27.70	28.27	28.33	28.90	29.64
12H	4H	22.12	22.89	22.73	23.50	24.16	24.57	25.33	25.18	25.95	26.61
	6H	22.87	23.51	23.50	24.15	24.82	26.06	26.70	26.69	27.34	28.02
	8H	23.19	23.77	23.82	24.39	25.13	26.91	27.49	27.54	28.11	28.85