

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: P243374

Luminaire Tested: S123DRP-H1165D930-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243374
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-H1165D930-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

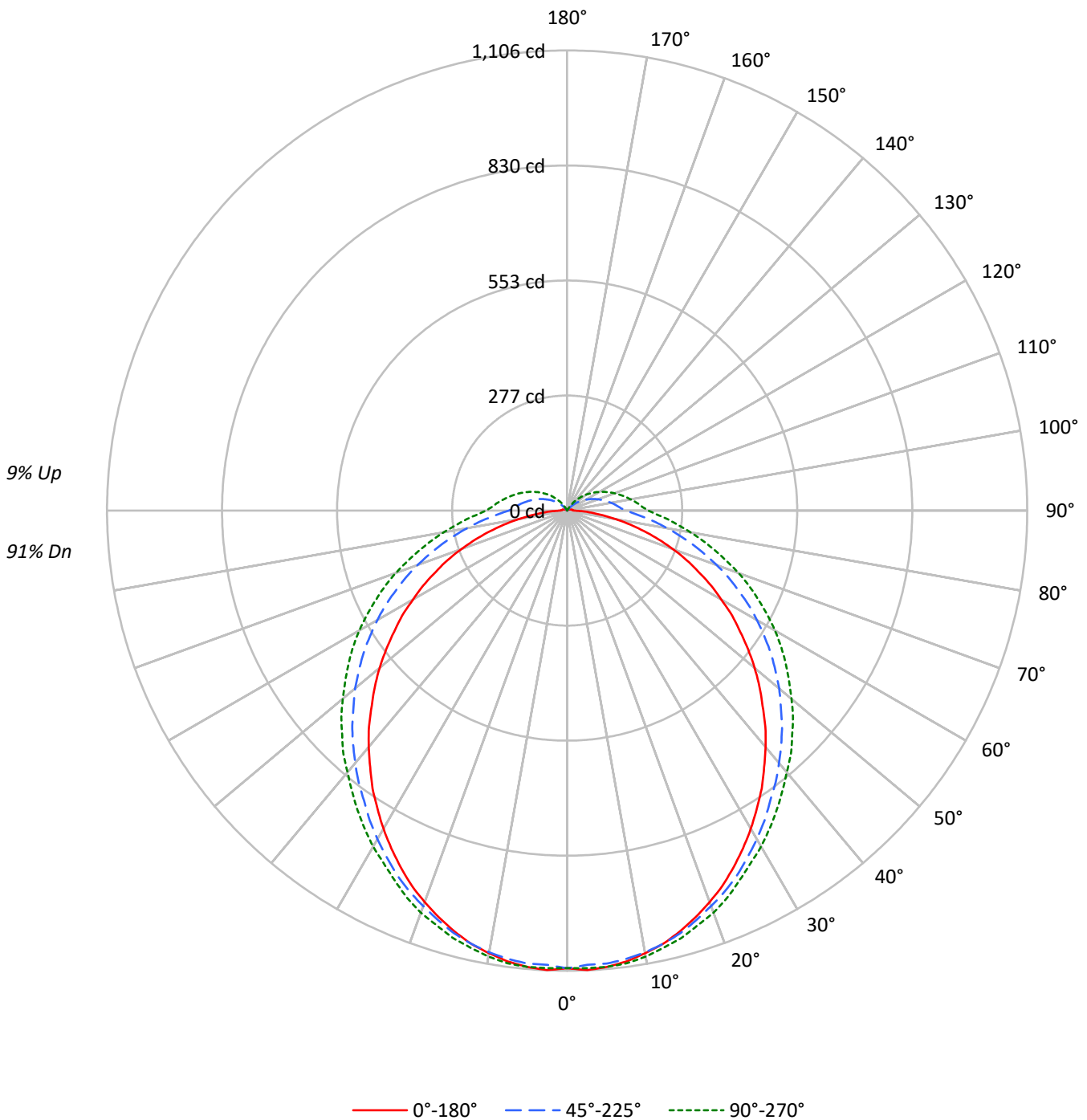
Lumens per Lamp: N/A
Luminaire Lumens: 3732.8 lumens
Efficiency: N/A
Efficacy: 99.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 37.7
Input Voltage (V): 120
Input Current (A_{in}): 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	117	117	117	117	113	113	113	113	106	106	106	100	100	100	94	94	94	91
1	105	100	95	90	101	96	92	88	91	87	84	85	82	80	80	78	76	73
2	95	86	79	72	91	83	77	71	78	73	68	74	69	65	69	66	62	60
3	86	75	66	60	83	73	65	58	69	62	56	65	59	54	61	56	52	50
4	79	66	57	50	76	64	56	49	61	53	48	57	51	46	54	49	45	42
5	72	59	50	43	70	57	49	42	54	47	41	51	45	40	49	43	39	36
6	67	53	44	37	64	52	43	37	49	41	36	46	40	35	44	38	34	31
7	62	48	39	33	60	47	38	32	44	37	32	42	36	31	40	34	30	28
8	57	44	35	29	55	43	34	29	41	33	28	39	32	27	37	31	27	25
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	28	24	22
10	50	37	29	24	49	36	29	23	35	28	23	33	27	22	32	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13331	13331	13331
5°	13370	12988	12982
10°	13246	12660	12588
15°	13063	12299	12156
20°	12814	11871	11718
25°	12528	11473	11212
30°	12207	11027	10786
35°	11887	10575	10361
40°	11533	10206	9955
45°	11143	9842	9616
50°	10817	9470	9263
55°	10416	9091	8917
60°	9999	8671	8580
65°	9558	8222	8169
70°	9055	7742	7767
75°	8302	7219	7292
80°	7348	6702	6875
85°	6531	6283	6557

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 11143 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	104.4	2.8
10°-20°	297.7	8.0
20°-30°	445.8	11.9
30°-40°	533.5	14.3
40°-50°	559.4	15.0
50°-60°	525.9	14.1
60°-70°	440.1	11.8
70°-80°	315.8	8.5
80°-90°	189.2	5.1
90°-100°	119.9	3.2
100°-110°	88.4	2.4
110°-120°	59.2	1.6
120°-130°	34.1	0.9
130°-140°	15.7	0.4
140°-150°	3.6	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	847.9	22.7
0°-40°	1381.4	37.0
0°-60°	2466.7	66.1
0°-90°	3411.8	91.4
90°-120°	267.5	7.2
90°-150°	320.9	8.6
90°-180°	321.0	8.6
0°-180°	3732.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1100	1100	1100	1100	1100	
5°	1101	1100	1093	1102	1101	104
15°	1047	1054	1052	1065	1063	295
25°	946	959	967	982	980	436
35°	815	835	851	873	878	509
45°	664	697	730	756	765	514
55°	508	550	598	630	641	455
65°	349	400	454	494	507	346
75°	192	250	311	353	367	203
85°	58	119	186	228	243	60
90°	16	76	140	182	195	11
95°	13	62	122	161	173	10
105°	9	40	93	127	138	10
115°	6	21	65	95	106	6
125°	5	5	40	65	74	4
135°	2	1	17	38	45	2
145°	1	0	0	12	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°	1099.8	1099.8	1099.8	1099.8	1099.8
2.5°	1105.5	1102.1	1092.9	1103.2	1100.9
5°	1100.9	1099.8	1092.9	1102.1	1100.9
7.5°	1092.9	1092.9	1087.2	1097.5	1097.5
10°	1080.3	1083.7	1078.0	1089.5	1088.3
12.5°	1066.5	1071.1	1066.5	1079.2	1075.7
15°	1047.0	1053.9	1051.6	1065.4	1063.1
17.5°	1025.3	1033.3	1032.1	1045.9	1044.7
20°	1001.2	1011.5	1011.5	1025.3	1028.7
22.5°	975.9	987.4	990.8	1004.6	1006.9
25°	946.1	958.7	966.8	981.7	980.5
27.5°	915.2	930.1	939.2	955.3	955.3
30°	883.0	900.2	911.7	928.9	932.4
32.5°	848.6	869.3	883.0	901.4	906.0
35°	815.4	834.9	850.9	872.7	878.5
37.5°	777.5	801.6	823.4	846.3	849.8
40°	742.0	768.4	792.4	816.5	821.1
42.5°	705.3	732.8	761.5	785.6	795.9
45°	664.0	697.3	730.5	755.7	764.9
47.5°	627.3	660.6	696.1	725.9	736.3
50°	588.3	622.7	665.2	693.8	704.1
52.5°	548.2	586.0	630.7	661.7	672.0
55°	508.0	550.5	597.5	629.6	641.1
57.5°	470.2	512.6	561.9	597.5	610.1
60°	427.8	474.8	526.4	563.1	576.8
62.5°	389.9	438.1	492.0	528.7	542.4
65°	348.6	400.2	454.1	494.3	506.9
67.5°	310.8	361.2	419.7	459.9	473.6
70°	270.6	323.4	381.9	423.2	438.1
72.5°	230.5	286.7	346.3	388.8	401.4
75°	191.5	250.0	310.8	353.2	367.0
77.5°	154.8	213.3	276.4	318.8	333.7
80°	118.1	178.9	244.3	286.7	301.6
82.5°	86.0	147.9	214.5	255.7	269.5
85°	58.5	119.3	185.8	228.2	243.1
87.5°	34.4	96.3	160.6	203.0	215.6
90°	16.1	75.7	139.9	182.3	195.0
92.5°	14.9	67.7	129.6	169.7	182.3
95°	12.6	61.9	121.6	160.6	173.2
97.5°	12.6	56.2	114.7	152.5	164.0
100°	11.5	50.5	107.8	143.4	154.8
102.5°	10.3	44.7	99.8	135.3	146.8
105°	9.2	40.1	92.9	127.3	137.6
107.5°	8.0	34.4	86.0	119.3	129.6
110°	8.0	29.8	79.1	111.2	121.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	6.9	25.2	72.2	103.2	113.5
115°	5.7	20.6	65.4	95.2	105.5
117.5°	5.7	16.1	58.5	88.3	97.5
120°	5.7	12.6	52.8	80.3	89.5
122.5°	4.6	8.0	47.0	73.4	82.6
125°	4.6	4.6	40.1	65.4	74.5
127.5°	3.4	2.3	34.4	58.5	66.5
130°	3.4	2.3	28.7	51.6	59.6
132.5°	2.3	2.3	22.9	44.7	52.8
135°	2.3	1.1	17.2	37.8	44.7
137.5°	2.3	1.1	11.5	31.0	37.8
140°	1.1	1.1	5.7	24.1	31.0
142.5°	1.1	0.0	1.1	18.3	24.1
145°	1.1	0.0	0.0	11.5	16.1
147.5°	1.1	0.0	0.0	5.7	10.3
150°	1.1	0.0	0.0	0.0	3.4
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	18.03	19.54	18.53	20.02	20.54	20.10	21.60	20.59	22.09	22.61
	3H	19.59	20.96	20.09	21.45	22.01	22.50	23.87	23.00	24.36	24.92
	4H	20.11	21.41	20.64	21.92	22.50	23.61	24.91	24.14	25.42	26.00
	6H	20.45	21.66	20.99	22.18	22.78	24.74	25.95	25.28	26.47	27.06
	8H	20.54	21.70	21.09	22.24	22.84	25.30	26.46	25.85	27.01	27.60
	12H	20.59	21.70	21.14	22.24	22.86	25.92	27.03	26.48	27.57	28.20
4H	2H	18.95	20.25	19.47	20.76	21.33	20.55	21.85	21.08	22.36	22.94
	3H	20.75	21.86	21.29	22.41	23.01	23.16	24.27	23.70	24.82	25.42
	4H	21.42	22.43	21.98	22.99	23.62	24.44	25.45	25.00	26.01	26.64
	6H	21.89	22.78	22.47	23.37	24.01	25.74	26.63	26.32	27.22	27.86
	8H	22.03	22.87	22.61	23.45	24.11	26.40	27.24	26.98	27.83	28.48
	12H	22.11	22.87	22.72	23.49	24.15	27.13	27.89	27.73	28.51	29.17
8H	4H	22.07	22.91	22.65	23.49	24.15	24.66	25.50	25.25	26.09	26.74
	6H	22.72	23.43	23.34	24.06	24.72	26.12	26.83	26.74	27.46	28.12
	8H	22.95	23.59	23.58	24.23	24.91	26.91	27.55	27.53	28.19	28.86
	12H	23.12	23.70	23.75	24.32	25.06	27.80	28.37	28.43	29.00	29.74
12H	4H	22.22	22.99	22.83	23.60	24.26	24.67	25.44	25.28	26.05	26.71
	6H	22.97	23.61	23.60	24.25	24.92	26.16	26.80	26.79	27.44	28.12
	8H	23.29	23.87	23.92	24.49	25.23	27.01	27.58	27.64	28.21	28.95