

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: P243384

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243384
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-H1165D940-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

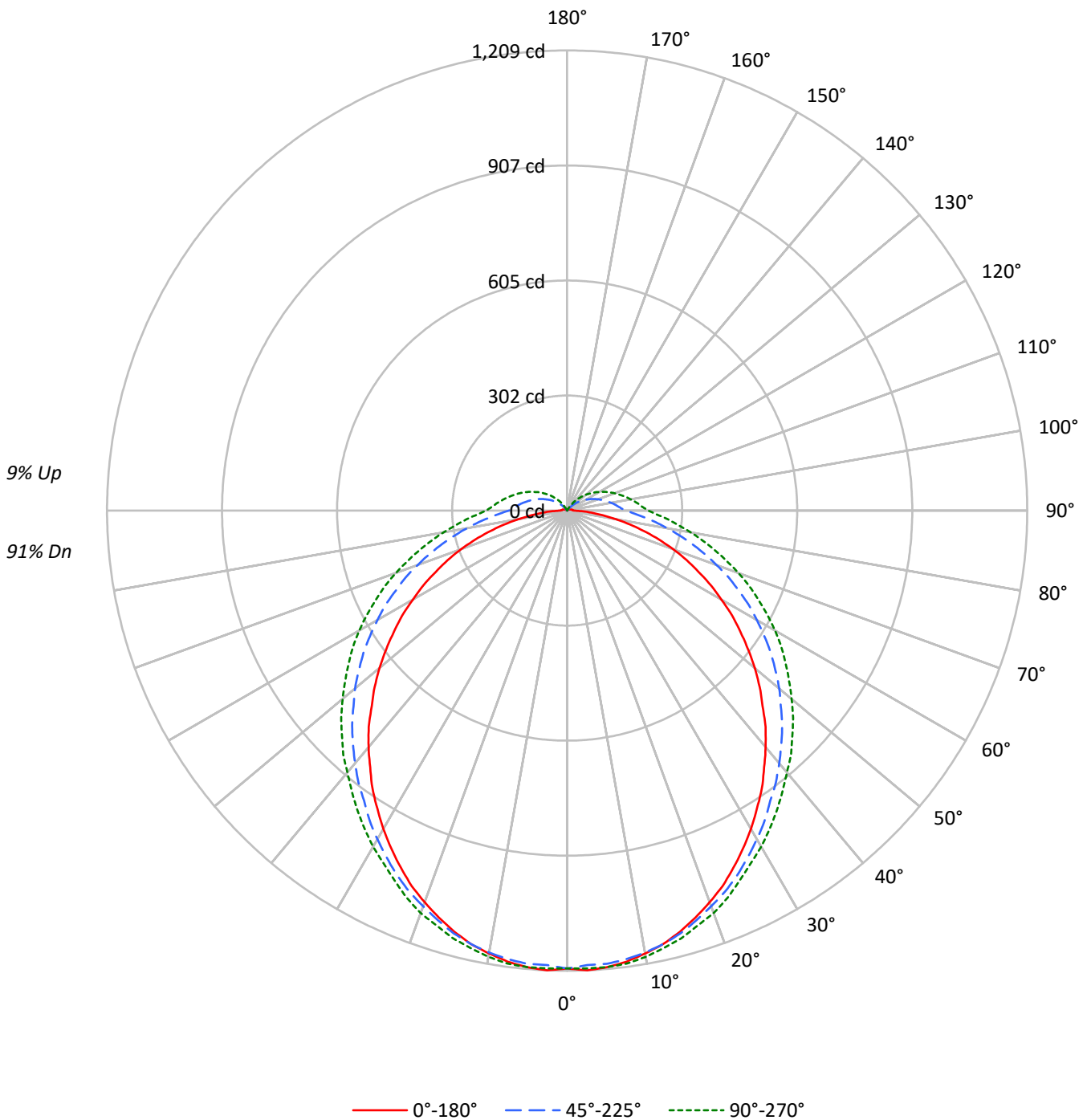
Lumens per Lamp: N/A
Luminaire Lumens: 4082.7 lumens
Efficiency: N/A
Efficacy: 108.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

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	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°	14581	14581	14581
5°	14623	14205	14199
10°	14487	13846	13768
15°	14289	13452	13295
20°	14015	12983	12817
25°	13702	12548	12263
30°	13352	12061	11796
35°	13000	11566	11332
40°	12613	11163	10889
45°	12186	10765	10517
50°	11831	10357	10132
55°	11394	9943	9753
60°	10936	9483	9384
65°	10454	8994	8934
70°	9905	8468	8494
75°	9083	7895	7976
80°	8038	7330	7520
85°	7145	6871	7172

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 12186 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	114.2	2.8
10°-20°	325.6	8.0
20°-30°	487.6	11.9
30°-40°	583.5	14.3
40°-50°	611.8	15.0
50°-60°	575.2	14.1
60°-70°	481.4	11.8
70°-80°	345.4	8.5
80°-90°	206.9	5.1
90°-100°	131.2	3.2
100°-110°	96.7	2.4
110°-120°	64.7	1.6
120°-130°	37.3	0.9
130°-140°	17.2	0.4
140°-150°	3.9	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	927.4	22.7
0°-40°	1510.9	37.0
0°-60°	2697.9	66.1
0°-90°	3731.6	91.4
90°-120°	292.6	7.2
90°-150°	351.0	8.6
90°-180°	351.0	8.6
0°-180°	4082.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1203	1203	1203	1203	1203	
5°	1204	1203	1195	1205	1204	114
15°	1145	1153	1150	1165	1163	323
25°	1035	1049	1057	1074	1072	477
35°	892	913	931	954	961	557
45°	726	763	799	827	837	562
55°	556	602	654	689	701	498
65°	381	438	497	541	554	379
75°	210	273	340	386	401	222
85°	64	130	203	250	266	66
90°	18	83	153	199	213	12
95°	14	68	133	176	189	11
105°	10	44	102	139	150	11
115°	6	23	72	104	115	7
125°	5	5	44	72	82	4
135°	2	1	19	41	49	2
145°	1	0	0	12	18	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°	1202.9	1202.9	1202.9	1202.9	1202.9
2.5°	1209.1	1205.4	1195.3	1206.6	1204.1
5°	1204.1	1202.9	1195.3	1205.4	1204.1
7.5°	1195.3	1195.3	1189.1	1200.4	1200.4
10°	1181.5	1185.3	1179.0	1191.6	1190.3
12.5°	1166.5	1171.5	1166.5	1180.3	1176.5
15°	1145.2	1152.7	1150.2	1165.2	1162.7
17.5°	1121.3	1130.1	1128.9	1143.9	1142.7
20°	1095.0	1106.3	1106.3	1121.3	1125.1
22.5°	1067.4	1079.9	1083.7	1098.8	1101.3
25°	1034.8	1048.6	1057.4	1073.7	1072.4
27.5°	1000.9	1017.2	1027.3	1044.8	1044.8
30°	965.8	984.6	997.2	1016.0	1019.7
32.5°	928.2	950.8	965.8	985.9	990.9
35°	891.8	913.1	930.7	954.5	960.8
37.5°	850.4	876.8	900.6	925.7	929.4
40°	811.5	840.4	866.7	893.1	898.1
42.5°	771.4	801.5	832.9	859.2	870.5
45°	726.2	762.6	799.0	826.6	836.6
47.5°	686.1	722.5	761.4	794.0	805.3
50°	643.5	681.1	727.5	758.8	770.1
52.5°	599.6	640.9	689.9	723.7	735.0
55°	555.7	602.1	653.5	688.6	701.2
57.5°	514.3	560.7	614.6	653.5	667.3
60°	467.9	519.3	575.7	615.9	630.9
62.5°	426.5	479.1	538.1	578.2	593.3
65°	381.3	437.7	496.7	540.6	554.4
67.5°	339.9	395.1	459.1	503.0	518.0
70°	296.0	353.7	417.7	462.8	479.1
72.5°	252.1	313.6	378.8	425.2	439.0
75°	209.5	273.4	339.9	386.3	401.4
77.5°	169.3	233.3	302.3	348.7	365.0
80°	129.2	195.7	267.2	313.6	329.9
82.5°	94.1	161.8	234.6	279.7	294.8
85°	64.0	130.4	203.2	249.6	265.9
87.5°	37.6	105.4	175.6	222.0	235.8
90°	17.6	82.8	153.0	199.4	213.2
92.5°	16.3	74.0	141.7	185.6	199.4
95°	13.8	67.7	133.0	175.6	189.4
97.5°	13.8	61.5	125.4	166.8	179.4
100°	12.5	55.2	117.9	156.8	169.3
102.5°	11.3	48.9	109.1	148.0	160.5
105°	10.0	43.9	101.6	139.2	150.5
107.5°	8.8	37.6	94.1	130.4	141.7
110°	8.8	32.6	86.5	121.7	133.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	7.5	27.6	79.0	112.9	124.2
115°	6.3	22.6	71.5	104.1	115.4
117.5°	6.3	17.6	64.0	96.6	106.6
120°	6.3	13.8	57.7	87.8	97.8
122.5°	5.0	8.8	51.4	80.3	90.3
125°	5.0	5.0	43.9	71.5	81.5
127.5°	3.8	2.5	37.6	64.0	72.7
130°	3.8	2.5	31.4	56.4	65.2
132.5°	2.5	2.5	25.1	48.9	57.7
135°	2.5	1.3	18.8	41.4	48.9
137.5°	2.5	1.3	12.5	33.9	41.4
140°	1.3	1.3	6.3	26.3	33.9
142.5°	1.3	0.0	1.3	20.1	26.3
145°	1.3	0.0	0.0	12.5	17.6
147.5°	1.3	0.0	0.0	6.3	11.3
150°	1.3	0.0	0.0	0.0	3.8
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	18.35	19.85	18.84	20.33	20.85	20.41	21.92	20.91	22.40	22.92
	3H	19.90	21.27	20.40	21.76	22.32	22.81	24.18	23.31	24.67	25.23
	4H	20.42	21.72	20.95	22.23	22.81	23.92	25.22	24.45	25.73	26.31
	6H	20.76	21.97	21.30	22.50	23.09	25.05	26.26	25.59	26.78	27.37
	8H	20.85	22.01	21.40	22.56	23.15	25.61	26.77	26.17	27.32	27.92
	12H	20.90	22.01	21.46	22.55	23.18	26.23	27.34	26.79	27.88	28.51
4H	2H	19.26	20.56	19.79	21.07	21.64	20.86	22.16	21.39	22.67	23.25
	3H	21.06	22.17	21.60	22.72	23.32	23.48	24.58	24.01	25.13	25.73
	4H	21.73	22.74	22.29	23.31	23.93	24.75	25.76	25.31	26.32	26.95
	6H	22.20	23.10	22.78	23.68	24.33	26.05	26.94	26.63	27.53	28.18
	8H	22.34	23.18	22.92	23.77	24.42	26.71	27.55	27.29	28.14	28.79
	12H	22.42	23.18	23.03	23.80	24.46	27.44	28.20	28.04	28.82	29.48
8H	4H	22.38	23.22	22.96	23.80	24.46	24.97	25.81	25.56	26.40	27.06
	6H	23.03	23.74	23.65	24.37	25.03	26.43	27.14	27.05	27.77	28.43
	8H	23.27	23.91	23.89	24.55	25.22	27.22	27.86	27.85	28.50	29.17
	12H	23.44	24.01	24.06	24.64	25.37	28.11	28.69	28.74	29.31	30.05
12H	4H	22.54	23.30	23.14	23.91	24.57	24.98	25.75	25.59	26.36	27.02
	6H	23.28	23.92	23.91	24.56	25.24	26.47	27.12	27.10	27.76	28.43
	8H	23.61	24.18	24.24	24.81	25.54	27.32	27.90	27.95	28.52	29.26