

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: P242671

Luminaire Tested: S124DRP-S1020D830-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242671
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-16)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124DRP-S1020D830-X4F0-XX-UDD-D-W
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

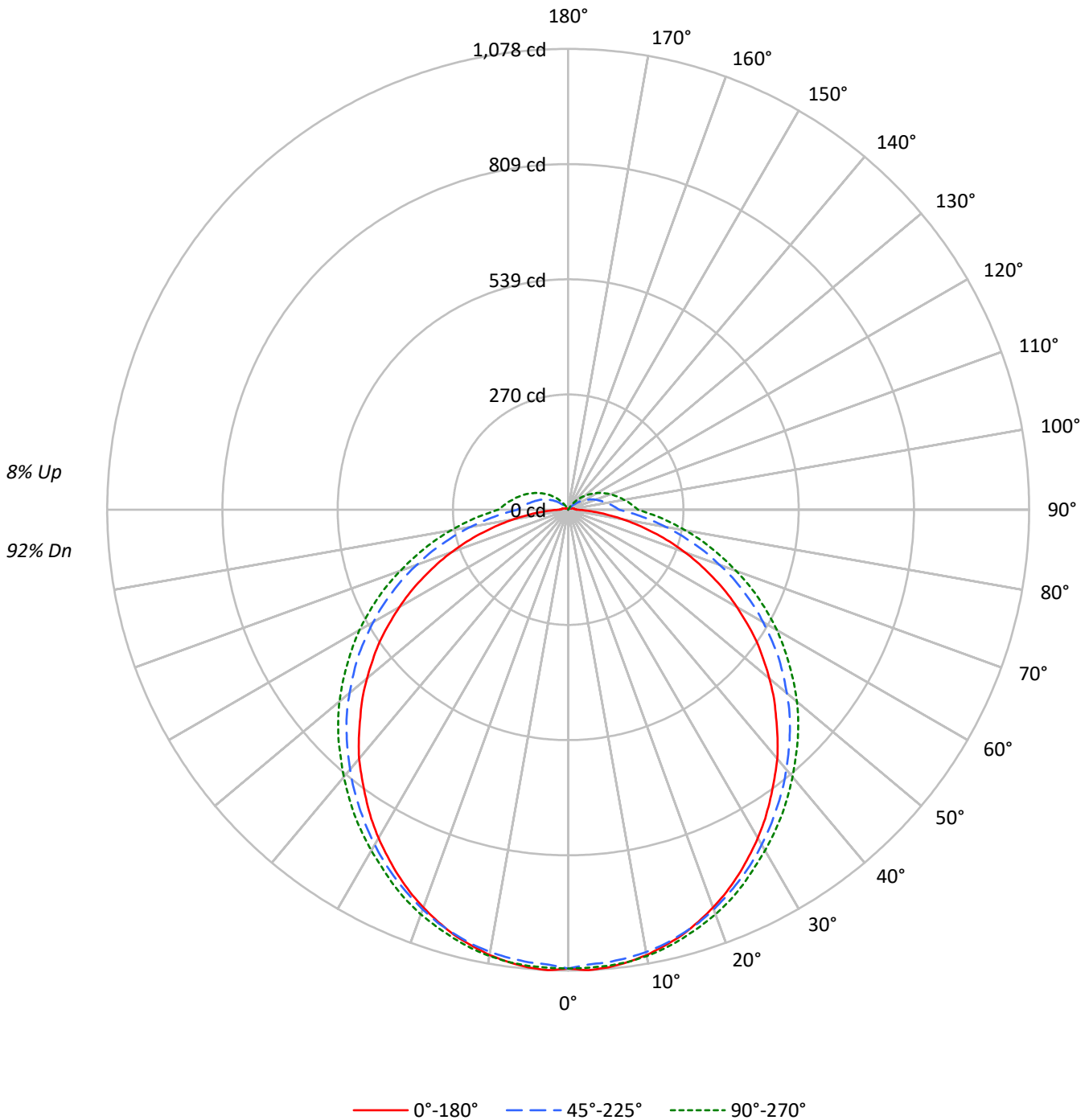
Lumens per Lamp: N/A
Luminaire Lumens: 3659.5 lumens
Efficiency: N/A
Efficacy: 105.2 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.31' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 34.8
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	114	114	114	114	107	107	107	101	101	101	95	95	95	92
1	105	100	95	91	102	97	93	89	91	88	84	86	83	80	81	79	77	74
2	95	86	79	73	92	84	77	71	79	73	68	74	70	66	70	67	63	60
3	87	75	67	60	83	73	65	59	69	62	57	65	60	55	62	57	53	50
4	79	66	57	50	76	65	56	49	61	54	48	58	52	47	55	49	45	43
5	73	59	50	43	70	58	49	42	55	47	41	52	45	40	49	44	39	37
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	45	39	34	32
7	62	48	39	33	60	47	38	32	45	37	32	43	36	31	41	35	30	28
8	58	44	35	29	56	43	35	29	41	33	28	39	32	28	37	31	27	25
9	54	40	32	26	52	39	31	26	38	30	25	36	29	25	34	29	24	22
10	50	37	29	24	49	36	29	23	35	28	23	33	27	23	32	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9541	9541	9541
5°	9571	9314	9339
10°	9511	9153	9139
15°	9425	8968	8909
20°	9296	8764	8685
25°	9150	8538	8441
30°	8994	8312	8189
35°	8815	8081	7968
40°	8672	7861	7738
45°	8460	7657	7539
50°	8281	7423	7328
55°	8097	7200	7082
60°	7807	6918	6855
65°	7491	6614	6578
70°	7109	6268	6256
75°	6572	5886	5959
80°	5977	5509	5658
85°	5215	5156	5452

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 8460 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	101.7	2.8
10°-20°	291.4	8.0
20°-30°	440.6	12.0
30°-40°	533.0	14.6
40°-50°	563.5	15.4
50°-60°	530.3	14.5
60°-70°	440.1	12.0
70°-80°	308.8	8.4
80°-90°	174.1	4.8
90°-100°	103.7	2.8
100°-110°	76.8	2.1
110°-120°	51.5	1.4
120°-130°	29.0	0.8
130°-140°	12.5	0.3
140°-150°	2.5	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	833.7	22.8
0°-40°	1366.7	37.3
0°-60°	2460.6	67.2
0°-90°	3383.6	92.5
90°-120°	231.9	6.3
90°-150°	275.9	7.5
90°-180°	276.0	7.5
0°-180°	3659.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1073	1073	1073	1073	1073	
5°	1075	1071	1062	1072	1071	102
15°	1030	1031	1028	1038	1037	290
25°	942	950	953	966	968	434
35°	825	839	851	868	871	516
45°	688	710	733	754	760	531
55°	538	564	600	624	631	480
65°	373	411	452	482	492	369
75°	207	251	302	335	346	220
85°	64	114	168	204	216	66
90°	19	67	119	154	164	13
95°	16	55	105	137	148	12
105°	11	35	79	109	119	12
115°	7	18	56	83	91	8
125°	5	4	34	56	64	5
135°	2	2	11	30	37	2
145°	1	0	0	7	12	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°	1073.4	1073.4	1073.4	1073.4	1073.4
2.5°	1078.2	1074.6	1064.9	1073.4	1072.2
5°	1074.6	1071.0	1062.5	1072.2	1071.0
7.5°	1067.4	1064.9	1057.7	1068.6	1067.4
10°	1057.7	1056.5	1050.5	1061.3	1060.1
12.5°	1044.5	1044.5	1040.9	1050.5	1050.5
15°	1030.1	1031.3	1027.7	1038.5	1037.3
17.5°	1010.9	1014.5	1013.3	1024.1	1022.9
20°	990.4	994.0	995.2	1007.3	1007.3
22.5°	967.6	972.4	974.8	986.8	989.2
25°	942.3	949.6	953.2	966.4	967.6
27.5°	914.7	925.5	930.3	942.3	943.5
30°	887.1	896.7	905.1	918.3	920.7
32.5°	857.0	869.0	878.6	894.3	896.7
35°	824.6	839.0	851.0	867.8	871.4
37.5°	792.1	808.9	823.4	840.2	843.8
40°	760.8	776.5	793.3	811.3	816.1
42.5°	724.8	742.8	763.3	783.7	787.3
45°	687.5	710.4	733.2	753.6	759.6
47.5°	652.7	675.5	702.0	722.4	729.6
50°	614.2	640.7	667.1	691.1	698.3
52.5°	575.7	602.2	633.4	657.5	664.7
55°	538.5	563.7	599.8	623.8	631.0
57.5°	496.4	527.7	562.5	591.4	597.4
60°	455.5	486.8	526.5	554.1	563.7
62.5°	415.9	450.7	490.4	518.1	527.7
65°	372.6	411.1	451.9	482.0	491.6
67.5°	331.7	372.6	415.9	445.9	455.5
70°	289.7	330.5	376.2	408.7	417.1
72.5°	248.8	290.9	340.2	371.4	381.0
75°	206.7	251.2	301.7	335.4	346.2
77.5°	167.1	214.0	266.8	300.5	312.5
80°	131.0	179.1	232.0	268.0	277.7
82.5°	95.0	145.4	198.3	235.6	246.4
85°	63.7	114.2	168.3	204.3	216.4
87.5°	39.7	88.9	141.8	176.7	187.5
90°	19.2	67.3	119.0	153.9	163.5
92.5°	18.0	60.1	111.8	145.4	155.1
95°	15.6	55.3	104.6	137.0	147.8
97.5°	14.4	49.3	98.6	129.8	140.6
100°	13.2	44.5	91.3	123.8	132.2
102.5°	13.2	39.7	85.3	116.6	126.2
105°	10.8	34.9	79.3	109.4	119.0
107.5°	10.8	31.3	73.3	103.4	111.8
110°	9.6	26.4	68.5	96.2	105.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	8.4	22.8	62.5	88.9	98.6
115°	7.2	18.0	56.5	82.9	91.3
117.5°	7.2	14.4	50.5	75.7	85.3
120°	6.0	9.6	44.5	68.5	78.1
122.5°	6.0	6.0	38.5	62.5	70.9
125°	4.8	3.6	33.7	56.5	63.7
127.5°	4.8	3.6	27.6	49.3	57.7
130°	3.6	2.4	21.6	43.3	50.5
132.5°	3.6	2.4	16.8	37.3	44.5
135°	2.4	2.4	10.8	30.0	37.3
137.5°	2.4	1.2	6.0	24.0	30.0
140°	2.4	1.2	2.4	18.0	24.0
142.5°	1.2	1.2	0.0	13.2	18.0
145°	1.2	0.0	0.0	7.2	12.0
147.5°	1.2	0.0	0.0	1.2	6.0
150°	1.2	0.0	0.0	0.0	0.0
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	17.63	19.15	18.11	19.62	20.12	19.18	20.71	19.66	21.17	21.67
	3H	19.27	20.66	19.76	21.13	21.67	21.49	22.88	21.98	23.35	23.89
	4H	19.83	21.15	20.34	21.64	22.19	22.55	23.86	23.06	24.36	24.91
	6H	20.22	21.44	20.74	21.95	22.52	23.60	24.83	24.12	25.33	25.90
	8H	20.32	21.50	20.86	22.03	22.60	24.12	25.29	24.66	25.82	26.40
	12H	20.38	21.51	20.93	22.03	22.64	24.67	25.80	25.21	26.32	26.92
4H	2H	18.48	19.79	18.99	20.28	20.84	19.68	21.00	20.19	21.49	22.04
	3H	20.36	21.48	20.88	22.01	22.59	22.21	23.33	22.73	23.86	24.44
	4H	21.06	22.08	21.60	22.63	23.24	23.43	24.45	23.97	25.00	25.60
	6H	21.58	22.48	22.14	23.05	23.67	24.66	25.56	25.22	26.13	26.75
	8H	21.73	22.58	22.30	23.15	23.79	25.27	26.12	25.84	26.69	27.32
	12H	21.84	22.61	22.43	23.21	23.84	25.93	26.70	26.52	27.30	27.94
8H	4H	21.64	22.49	22.21	23.06	23.69	23.68	24.53	24.25	25.10	25.73
	6H	22.33	23.05	22.94	23.67	24.30	25.07	25.79	25.68	26.41	27.04
	8H	22.59	23.23	23.20	23.86	24.51	25.81	26.46	26.43	27.09	27.74
	12H	22.77	23.35	23.39	23.96	24.68	26.64	27.22	27.26	27.83	28.55
12H	4H	21.78	22.55	22.37	23.15	23.78	23.70	24.47	24.29	25.07	25.71
	6H	22.55	23.19	23.16	23.82	24.47	25.12	25.77	25.74	26.40	27.05
	8H	22.89	23.46	23.50	24.07	24.79	25.93	26.51	26.55	27.12	27.84