

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: P242685

Luminaire Tested: S124DRP-S1020D930-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242685
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-S1020D930-X4F0-XX-UDD-D-W
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

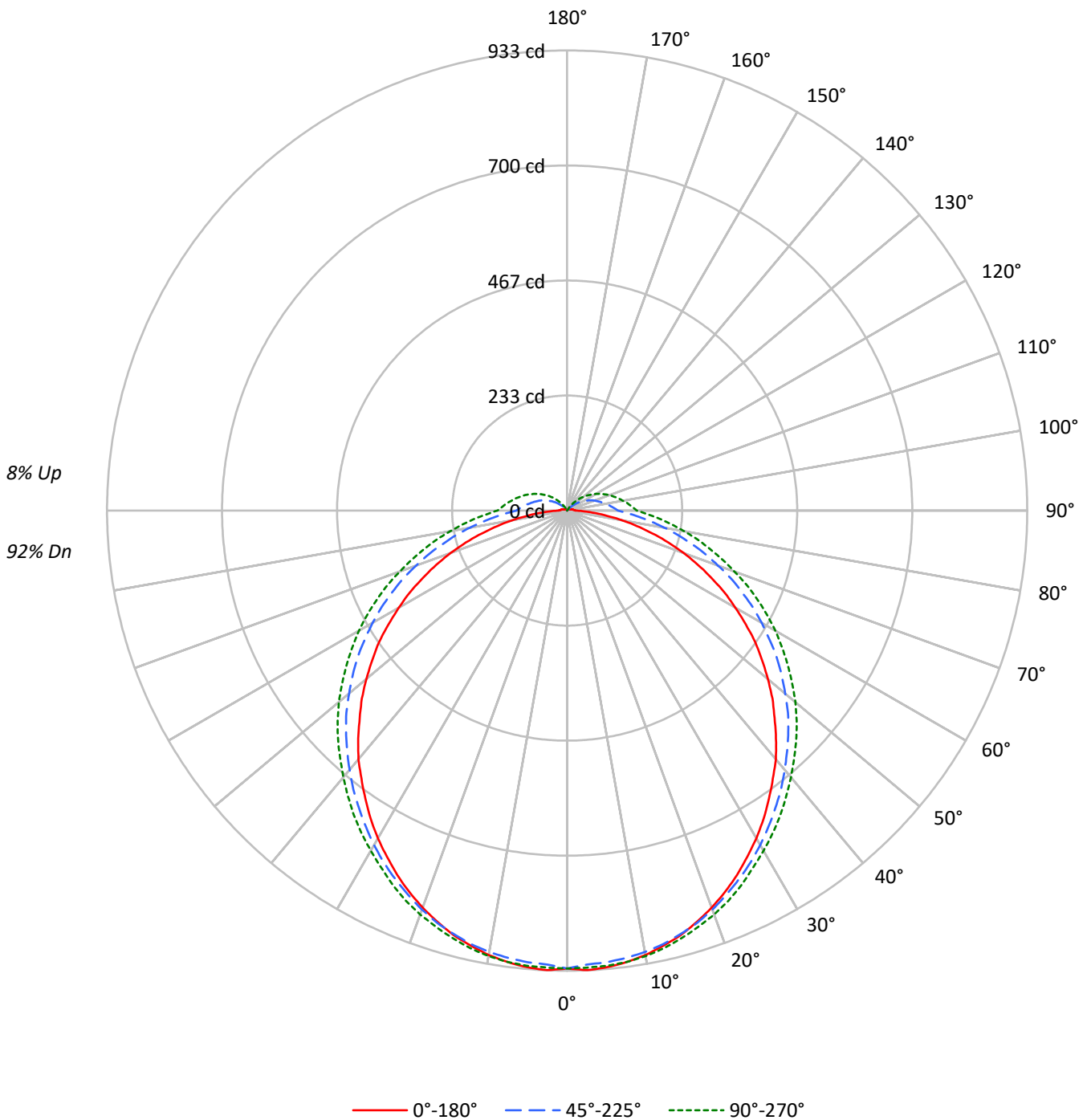
Lumens per Lamp: N/A
Luminaire Lumens: 3165.5 lumens
Efficiency: N/A
Efficacy: 91.0 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.31' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 34.8
Input Voltage (V): 120
Input Current (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	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°	8253	8253	8253
5°	8278	8057	8078
10°	8227	7917	7905
15°	8152	7757	7707
20°	8041	7581	7513
25°	7915	7385	7301
30°	7779	7190	7084
35°	7624	6990	6893
40°	7501	6800	6694
45°	7318	6623	6521
50°	7164	6420	6339
55°	7004	6228	6126
60°	6753	5984	5930
65°	6480	5722	5690
70°	6150	5422	5412
75°	5685	5092	5154
80°	5169	4766	4894
85°	4511	4461	4714

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 7318 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	88.0	2.8
10°-20°	252.1	8.0
20°-30°	381.1	12.0
30°-40°	461.1	14.6
40°-50°	487.4	15.4
50°-60°	458.7	14.5
60°-70°	380.7	12.0
70°-80°	267.1	8.4
80°-90°	150.6	4.8
90°-100°	89.7	2.8
100°-110°	66.4	2.1
110°-120°	44.6	1.4
120°-130°	25.1	0.8
130°-140°	10.9	0.3
140°-150°	2.1	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	721.1	22.8
0°-40°	1182.2	37.3
0°-60°	2128.4	67.2
0°-90°	2926.8	92.5
90°-120°	200.6	6.3
90°-150°	238.7	7.5
90°-180°	239.0	7.6
0°-180°	3165.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	928	928	928	928	928	
5°	930	926	919	927	926	88
15°	891	892	889	898	897	251
25°	815	821	824	836	837	375
35°	713	726	736	751	754	447
45°	595	614	634	652	657	460
55°	466	488	519	540	546	415
65°	322	356	391	417	425	320
75°	179	217	261	290	299	190
85°	55	99	146	177	187	57
90°	17	58	103	133	141	11
95°	14	48	90	118	128	11
105°	9	30	69	95	103	11
115°	6	16	49	72	79	7
125°	4	3	29	49	55	4
135°	2	2	9	26	32	2
145°	1	0	0	6	10	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°	928.5	928.5	928.5	928.5	928.5
2.5°	932.6	929.5	921.2	928.5	927.4
5°	929.5	926.4	919.1	927.4	926.4
7.5°	923.3	921.2	914.9	924.3	923.3
10°	914.9	913.9	908.7	918.1	917.0
12.5°	903.5	903.5	900.4	908.7	908.7
15°	891.0	892.1	888.9	898.3	897.3
17.5°	874.4	877.5	876.5	885.8	884.8
20°	856.7	859.8	860.9	871.3	871.3
22.5°	837.0	841.1	843.2	853.6	855.7
25°	815.1	821.4	824.5	835.9	837.0
27.5°	791.2	800.6	804.7	815.1	816.2
30°	767.3	775.6	782.9	794.3	796.4
32.5°	741.3	751.7	760.0	773.5	775.6
35°	713.2	725.7	736.1	750.7	753.8
37.5°	685.2	699.7	712.2	726.8	729.9
40°	658.1	671.7	686.2	701.8	706.0
42.5°	626.9	642.5	660.2	677.9	681.0
45°	594.7	614.5	634.2	651.9	657.1
47.5°	564.6	584.3	607.2	624.9	631.1
50°	531.3	554.2	577.0	597.8	604.1
52.5°	498.0	520.9	547.9	568.7	575.0
55°	465.8	487.6	518.8	539.6	545.8
57.5°	429.4	456.4	486.6	511.5	516.7
60°	394.0	421.1	455.4	479.3	487.6
62.5°	359.7	389.9	424.2	448.1	456.4
65°	322.3	355.6	390.9	416.9	425.2
67.5°	287.0	322.3	359.7	385.7	394.0
70°	250.6	285.9	325.4	353.5	360.8
72.5°	215.2	251.6	294.2	321.3	329.6
75°	178.8	217.3	261.0	290.1	299.4
77.5°	144.5	185.1	230.8	259.9	270.3
80°	113.3	154.9	200.7	231.9	240.2
82.5°	82.1	125.8	171.6	203.8	213.1
85°	55.1	98.8	145.6	176.8	187.1
87.5°	34.3	76.9	122.7	152.8	162.2
90°	16.6	58.2	102.9	133.1	141.4
92.5°	15.6	52.0	96.7	125.8	134.1
95°	13.5	47.8	90.5	118.5	127.9
97.5°	12.5	42.6	85.3	112.3	121.6
100°	11.4	38.5	79.0	107.1	114.4
102.5°	11.4	34.3	73.8	100.9	109.2
105°	9.4	30.2	68.6	94.6	102.9
107.5°	9.4	27.0	63.4	89.4	96.7
110°	8.3	22.9	59.3	83.2	91.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	7.3	19.8	54.1	76.9	85.3
115°	6.2	15.6	48.9	71.7	79.0
117.5°	6.2	12.5	43.7	65.5	73.8
120°	5.2	8.3	38.5	59.3	67.6
122.5°	5.2	5.2	33.3	54.1	61.3
125°	4.2	3.1	29.1	48.9	55.1
127.5°	4.2	3.1	23.9	42.6	49.9
130°	3.1	2.1	18.7	37.4	43.7
132.5°	3.1	2.1	14.6	32.2	38.5
135°	2.1	2.1	9.4	26.0	32.2
137.5°	2.1	1.0	5.2	20.8	26.0
140°	2.1	1.0	2.1	15.6	20.8
142.5°	1.0	1.0	0.0	11.4	15.6
145°	1.0	0.0	0.0	6.2	10.4
147.5°	1.0	0.0	0.0	1.0	5.2
150°	1.0	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	17.12	18.65	17.60	19.12	19.61	18.68	20.20	19.15	20.67	21.16
	3H	18.76	20.15	19.25	20.63	21.17	20.98	22.37	21.47	22.85	23.39
	4H	19.33	20.65	19.84	21.14	21.69	22.04	23.36	22.55	23.85	24.40
	6H	19.71	20.94	20.24	21.44	22.01	23.10	24.32	23.62	24.83	25.40
	8H	19.82	20.99	20.35	21.52	22.09	23.61	24.79	24.15	25.32	25.89
	12H	19.88	21.00	20.42	21.53	22.13	24.17	25.29	24.71	25.82	26.42
4H	2H	17.97	19.29	18.48	19.78	20.33	19.18	20.49	19.69	20.98	21.54
	3H	19.85	20.97	20.38	21.51	22.08	21.70	22.82	22.23	23.36	23.93
	4H	20.56	21.58	21.10	22.13	22.73	22.92	23.95	23.47	24.49	25.10
	6H	21.07	21.98	21.64	22.55	23.17	24.15	25.06	24.72	25.63	26.25
	8H	21.23	22.08	21.80	22.65	23.28	24.76	25.61	25.33	26.19	26.82
	12H	21.33	22.10	21.92	22.70	23.34	25.43	26.20	26.02	26.80	27.43
8H	4H	21.14	21.99	21.71	22.56	23.19	23.18	24.03	23.75	24.60	25.23
	6H	21.83	22.55	22.43	23.16	23.80	24.57	25.29	25.17	25.90	26.54
	8H	22.08	22.73	22.70	23.35	24.00	25.31	25.96	25.92	26.58	27.23
	12H	22.27	22.84	22.88	23.46	24.17	26.14	26.71	26.75	27.32	28.04
12H	4H	21.27	22.04	21.86	22.64	23.28	23.19	23.96	23.79	24.56	25.20
	6H	22.04	22.69	22.66	23.31	23.97	24.62	25.27	25.23	25.89	26.54
	8H	22.38	22.96	23.00	23.57	24.29	25.43	26.00	26.04	26.62	27.33