

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P907693

Luminaire Tested: DFN2DIP-4P3F0-050D020US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907693
REPORT IS A COMBINATION OF REPORTS P900556 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-050D020US840-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

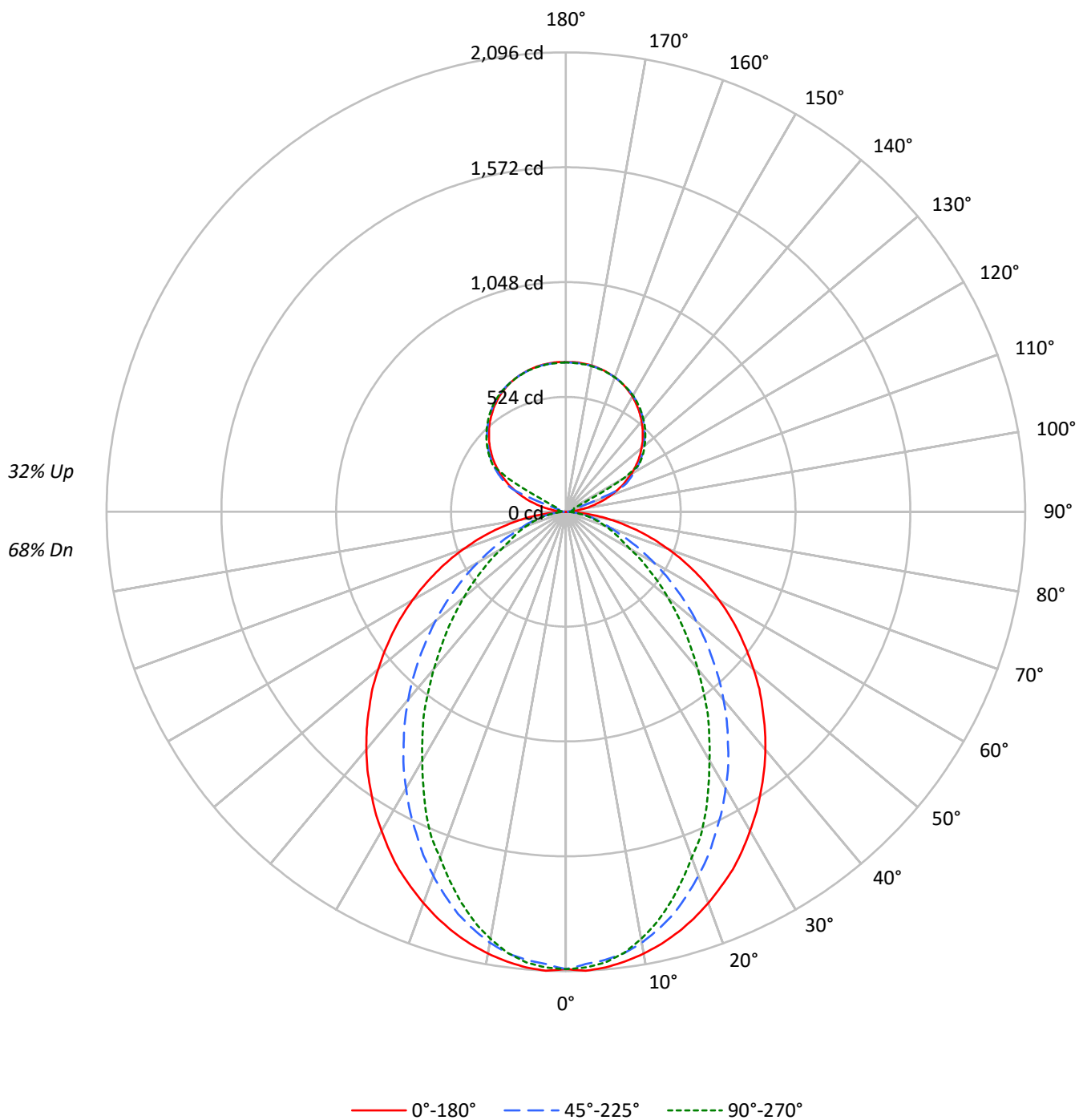
Lumens per Lamp: N/A
Luminaire Lumens: 6291.5 lumens
Efficiency: N/A
Efficacy: 98.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 64.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	111	111	111	111	105	105	105	105	93	93	93	83	83	83	73	73	73
1	103	98	95	91	97	93	90	87	83	81	78	74	72	70	65	64	63
2	94	87	81	76	88	82	77	72	74	69	66	66	63	60	58	56	54
3	86	77	70	64	81	73	66	61	66	60	56	59	55	51	52	49	47
4	79	69	61	55	75	65	58	53	59	53	49	53	48	45	47	44	41
5	73	62	53	48	69	59	51	46	53	47	42	48	43	39	43	39	36
6	68	56	47	42	64	53	46	40	48	42	38	43	39	35	39	35	32
7	63	50	43	37	59	48	41	36	44	38	33	40	35	31	36	32	29
8	58	46	38	33	55	44	37	32	40	34	30	37	32	28	33	29	26
9	55	42	35	30	52	41	34	29	37	31	27	34	29	25	31	27	24
10	51	39	32	27	48	37	31	26	34	29	25	31	27	23	29	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2378	2378	2378
5°	2381	2339	2355
10°	2355	2291	2277
15°	2322	2214	2158
20°	2277	2108	2012
25°	2232	1990	1871
30°	2171	1869	1693
35°	2112	1739	1536
40°	2051	1604	1357
45°	1981	1455	1194
50°	1908	1305	1035
55°	1832	1144	882
60°	1744	977	725
65°	1642	806	652
70°	1519	648	589
75°	1364	568	534
80°	1140	472	460
85°	774	308	342

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1981 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.6	3.1
10°-20°	536.9	8.5
20°-30°	753.8	12.0
30°-40°	821.7	13.1
40°-50°	755.2	12.0
50°-60°	593.1	9.4
60°-70°	386.1	6.1
70°-80°	198.7	3.2
80°-90°	51.9	0.8
90°-100°	22.5	0.4
100°-110°	83.8	1.3
110°-120°	222.2	3.5
120°-130°	368.6	5.9
130°-140°	391.5	6.2
140°-150°	363.9	5.8
150°-160°	292.5	4.6
160°-170°	188.5	3.0
170°-180°	64.9	1.0
0°-30°	1486.3	23.6
0°-40°	2308.0	36.7
0°-60°	3656.4	58.1
0°-90°	4293.2	68.2
90°-120°	328.5	5.2
90°-150°	1452.4	23.1
90°-180°	1998.0	31.8
0°-180°	6291.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2087	2087	2087	2087	2087	
5°	2087	2078	2053	2070	2064	198
15°	1985	1964	1900	1864	1845	559
25°	1802	1741	1617	1539	1511	829
35°	1552	1456	1290	1171	1129	972
45°	1269	1143	944	810	765	980
55°	965	818	614	500	465	862
65°	652	499	329	264	259	646
75°	348	215	151	138	136	368
85°	81	42	36	36	36	93
90°	0	6	10	12	13	6
95°	32	16	19	22	21	38
105°	150	165	30	35	38	160
115°	284	292	304	76	40	279
125°	401	407	417	420	422	358
135°	496	504	508	514	512	383
145°	576	575	584	587	584	360
155°	634	629	635	638	634	292
165°	668	665	666	670	666	189
175°	683	680	681	684	679	65
180°	682	682	682	682	682	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2086.9	2086.9	2086.9	2086.9	2086.9
2.5°	2096.3	2086.9	2066.1	2085.1	2081.2
5°	2086.9	2077.5	2052.9	2069.8	2064.3
7.5°	2069.8	2058.6	2032.2	2039.6	2030.1
10°	2047.2	2034.0	1996.3	1990.5	1979.2
12.5°	2018.9	2002.0	1950.9	1939.6	1918.7
15°	1984.9	1964.1	1900.0	1864.1	1845.2
17.5°	1945.2	1915.0	1835.6	1794.1	1763.8
20°	1900.0	1862.1	1767.7	1720.6	1678.9
22.5°	1850.9	1807.4	1697.8	1633.7	1605.4
25°	1801.7	1741.2	1616.6	1539.2	1510.8
27.5°	1743.2	1678.9	1541.1	1452.3	1408.9
30°	1680.9	1609.0	1457.9	1361.7	1310.6
32.5°	1620.4	1533.5	1378.8	1265.4	1218.1
35°	1552.5	1456.1	1290.0	1170.9	1129.3
37.5°	1486.3	1382.4	1206.9	1076.4	1029.4
40°	1416.4	1303.2	1119.8	985.8	936.8
42.5°	1344.7	1223.9	1033.1	893.2	846.2
45°	1269.2	1142.6	944.3	810.1	764.8
47.5°	1197.4	1063.4	859.4	725.2	683.7
50°	1118.1	984.0	776.3	645.8	606.3
52.5°	1040.6	898.9	696.9	572.3	536.4
55°	965.0	817.7	613.7	500.5	464.6
57.5°	887.7	736.6	540.2	434.4	404.1
60°	808.3	657.2	462.6	366.5	336.2
62.5°	730.9	579.9	396.6	306.0	290.9
65°	651.6	498.6	328.6	264.5	258.7
67.5°	576.0	423.0	264.5	232.3	226.6
70°	496.8	349.4	219.0	200.2	192.6
72.5°	421.2	281.3	183.2	168.1	164.3
75°	347.5	215.2	151.1	137.8	136.0
77.5°	273.9	152.9	119.1	111.4	107.6
80°	205.8	109.6	90.6	83.1	83.1
82.5°	143.5	73.7	62.3	58.5	58.5
85°	81.2	41.5	35.9	35.9	35.9
87.5°	30.3	15.0	15.0	13.2	13.2
90°	0.5	6.0	9.8	12.3	13.3
92.5°	12.3	10.4	11.8	12.8	13.3
95°	32.0	15.8	19.2	21.7	21.2
97.5°	57.7	17.3	25.1	26.7	27.2
100°	87.4	19.7	28.1	32.0	33.0
102.5°	119.9	118.9	29.1	34.5	36.1
105°	150.0	164.7	30.1	35.4	37.5
107.5°	185.0	197.2	31.1	36.5	38.5
110°	218.5	228.8	86.3	37.1	39.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	250.0	258.9	250.5	38.0	39.5
115°	283.6	292.0	304.4	75.9	40.5
117.5°	312.7	322.6	330.9	260.4	131.2
120°	345.3	352.6	361.5	367.5	300.8
122.5°	372.8	380.7	390.6	393.5	394.2
125°	401.0	407.4	416.8	420.2	421.7
127.5°	426.7	433.5	441.0	445.9	446.4
130°	450.8	458.7	464.1	469.6	469.1
132.5°	475.4	481.9	487.3	491.7	491.3
135°	496.2	504.1	508.5	513.5	512.5
137.5°	517.9	523.8	528.8	533.7	532.2
140°	539.1	543.1	548.5	552.9	550.5
142.5°	556.8	560.4	566.7	570.7	568.2
145°	575.6	575.1	583.5	586.9	584.5
147.5°	591.9	590.4	598.7	601.2	599.3
150°	607.6	604.2	612.1	615.0	612.6
152.5°	621.0	617.0	624.4	627.4	623.9
155°	633.8	629.3	635.3	638.2	634.3
157.5°	644.2	640.3	644.7	648.1	644.2
160°	653.1	650.1	653.1	656.0	652.6
162.5°	660.9	657.9	660.5	663.9	659.4
165°	667.8	664.9	666.3	669.8	666.3
167.5°	673.3	670.2	671.8	675.3	670.8
170°	677.7	674.7	675.7	679.1	674.7
172.5°	680.6	677.7	678.7	682.2	677.7
175°	683.1	679.6	680.6	684.1	679.1
177.5°	684.1	680.6	681.2	684.6	680.1
180°	681.7	681.7	681.7	681.7	681.7

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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	11.68	12.68	12.47	13.49	14.48	7.64	8.64	8.43	9.45	10.44
	3H	13.36	14.26	14.17	15.08	16.10	8.83	9.73	9.64	10.55	11.57
	4H	13.98	14.83	14.80	15.65	16.68	9.29	10.14	10.11	10.96	11.99
	6H	14.41	15.19	15.24	16.02	17.06	9.61	10.39	10.45	11.23	12.27
	8H	14.53	15.28	15.38	16.13	17.17	9.70	10.45	10.55	11.30	12.34
	12H	14.60	15.31	15.45	16.15	17.22	9.75	10.46	10.60	11.30	12.37
4H	2H	11.72	12.56	12.54	13.39	14.42	8.25	9.10	9.08	9.93	10.95
	3H	13.56	14.26	14.39	15.12	16.16	9.61	10.32	10.45	11.17	12.22
	4H	14.25	14.89	15.10	15.75	16.82	10.16	10.80	11.01	11.66	12.73
	6H	14.77	15.32	15.64	16.20	17.28	10.58	11.13	11.45	12.02	13.09
	8H	14.95	15.46	15.82	16.34	17.43	10.71	11.23	11.58	12.10	13.19
	12H	15.05	15.51	15.94	16.41	17.50	10.78	11.24	11.67	12.14	13.23
8H	4H	14.23	14.75	15.10	15.62	16.71	10.45	10.97	11.32	11.84	12.93
	6H	14.80	15.22	15.69	16.14	17.23	10.97	11.39	11.86	12.31	13.40
	8H	15.01	15.39	15.92	16.30	17.41	11.15	11.53	12.06	12.44	13.55
	12H	15.15	15.49	16.06	16.39	17.55	11.28	11.61	12.18	12.51	13.67
12H	4H	14.19	14.65	15.08	15.55	16.64	10.46	10.93	11.35	11.82	12.92
	6H	14.77	15.15	15.68	16.06	17.17	11.02	11.39	11.92	12.31	13.41
	8H	15.00	15.33	15.91	16.23	17.39	11.23	11.56	12.14	12.46	13.62