

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: P913973

Luminaire Tested: DFN2DIP-PN3F0-070D030US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913973
REPORT IS A COMBINATION OF REPORTS P901039 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-070D030US927-FLLONL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

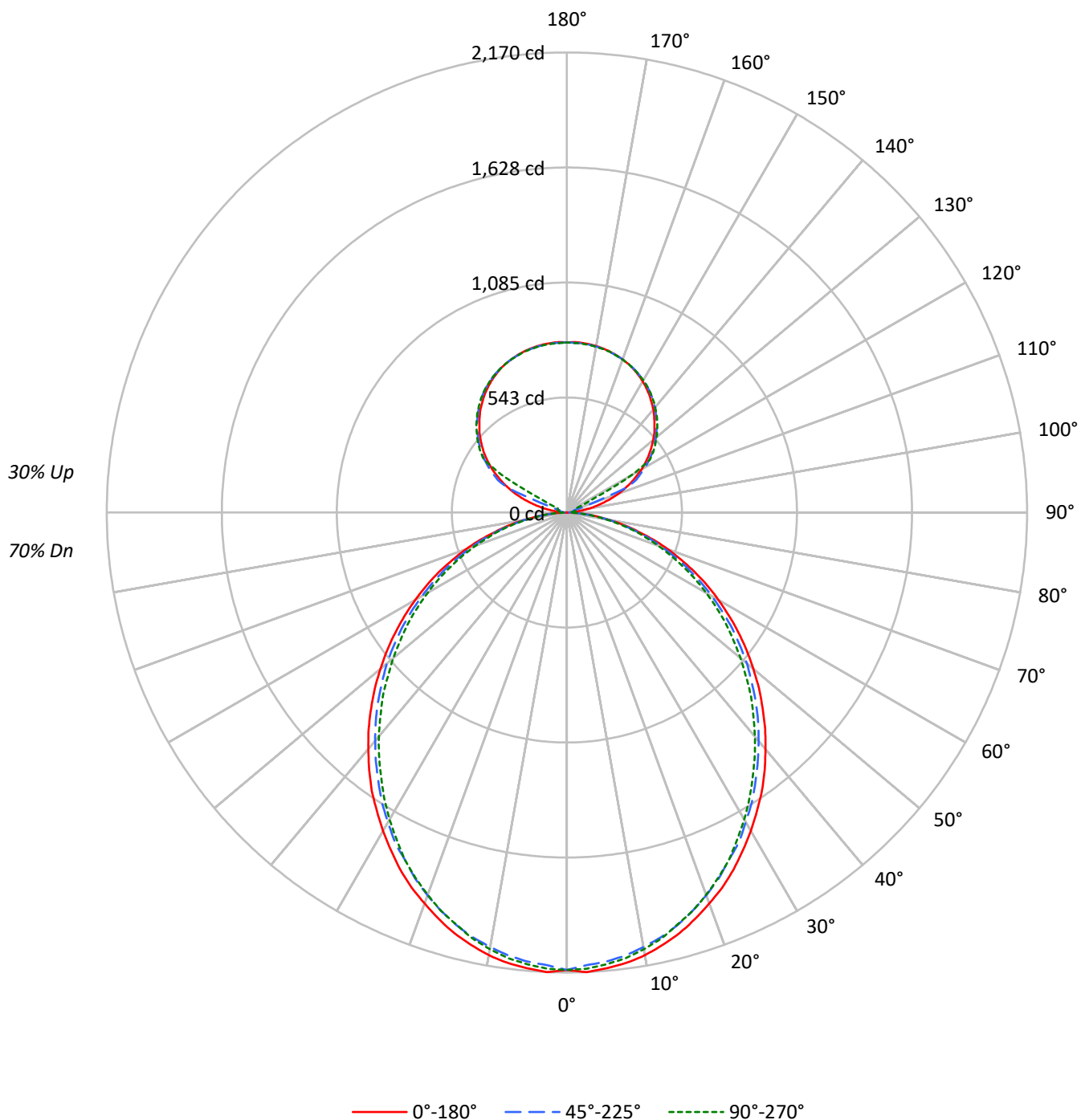
Lumens per Lamp: N/A
Luminaire Lumens: 7842.6 lumens
Efficiency: N/A
Efficacy: 84.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 92.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
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	112	112	112	112	106	106	106	106	94	94	94	84	84	84	75	75	75
1	102	98	94	90	97	93	89	86	83	80	78	74	72	70	66	64	63
2	93	85	79	74	88	81	75	71	73	68	64	65	62	59	58	55	53
3	85	75	68	62	80	71	65	59	64	59	54	58	53	50	51	48	45
4	78	67	58	52	73	63	56	50	57	51	46	51	47	43	46	42	39
5	72	60	51	45	67	57	49	43	51	45	40	46	41	37	41	37	34
6	66	54	45	39	62	51	43	38	46	40	35	42	37	33	38	33	30
7	61	48	40	34	58	46	39	33	42	36	31	38	33	29	34	30	27
8	57	44	36	31	54	42	35	30	38	32	28	35	30	26	32	27	24
9	53	40	33	27	50	39	32	27	35	29	25	32	27	23	29	25	22
10	50	37	30	25	47	36	29	24	33	27	23	30	25	21	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2522	2522	2522
5°	2525	2485	2503
10°	2503	2450	2468
15°	2465	2408	2414
20°	2413	2350	2359
25°	2362	2282	2295
30°	2299	2217	2214
35°	2238	2142	2129
40°	2164	2066	2047
45°	2090	1989	1964
50°	2010	1909	1868
55°	1925	1816	1779
60°	1829	1706	1677
65°	1724	1592	1557
70°	1590	1452	1428
75°	1405	1285	1307
80°	1182	1071	1078
85°	834	709	702

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2090 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	203.1	2.6
10°-20°	571.4	7.3
20°-30°	839.7	10.7
30°-40°	975.3	12.4
40°-50°	974.1	12.4
50°-60°	849.4	10.8
60°-70°	627.9	8.0
70°-80°	355.2	4.5
80°-90°	95.2	1.2
90°-100°	26.5	0.3
100°-110°	98.6	1.3
110°-120°	261.5	3.3
120°-130°	433.7	5.5
130°-140°	460.7	5.9
140°-150°	428.1	5.5
150°-160°	344.2	4.4
160°-170°	221.8	2.8
170°-180°	76.3	1.0
0°-30°	1614.2	20.6
0°-40°	2589.5	33.0
0°-60°	4412.9	56.3
0°-90°	5491.3	70.0
90°-120°	386.5	4.9
90°-150°	1709.0	21.8
90°-180°	2351.0	30.0
0°-180°	7842.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2158	2158	2158	2158	2158	
5°	2158	2150	2127	2143	2139	205
15°	2054	2042	2015	2023	2013	578
25°	1859	1842	1807	1811	1807	855
35°	1604	1583	1550	1537	1527	1002
45°	1305	1291	1259	1237	1228	1007
55°	988	975	950	925	915	883
65°	666	654	633	614	604	659
75°	348	344	334	322	326	372
85°	85	83	81	75	73	95
90°	1	7	12	15	16	7
95°	38	18	23	26	25	45
105°	176	194	35	42	44	188
115°	334	344	358	89	48	329
125°	472	479	490	494	496	421
135°	584	593	598	604	603	451
145°	677	677	687	691	688	424
155°	746	741	748	751	746	344
165°	786	782	784	788	784	222
175°	804	800	801	805	799	76
180°	802	802	802	802	802	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2157.7	2157.7	2157.7	2157.7	2157.7
2.5°	2170.3	2159.9	2137.0	2157.7	2153.7
5°	2157.7	2149.6	2126.7	2143.2	2139.2
7.5°	2143.2	2130.8	2107.9	2124.7	2120.5
10°	2120.5	2105.9	2081.1	2097.6	2091.4
12.5°	2089.2	2076.9	2052.1	2062.4	2058.2
15°	2054.0	2041.7	2014.6	2023.0	2012.6
17.5°	2010.4	1998.1	1971.0	1981.4	1971.0
20°	1962.6	1950.4	1921.3	1927.5	1919.3
22.5°	1915.1	1896.4	1869.3	1869.3	1865.1
25°	1859.0	1842.5	1807.3	1811.2	1807.3
27.5°	1796.7	1782.2	1755.3	1749.1	1738.8
30°	1734.6	1717.8	1686.9	1680.7	1672.3
32.5°	1668.1	1655.8	1622.5	1610.0	1601.6
35°	1603.8	1583.2	1549.9	1537.4	1527.0
37.5°	1531.2	1512.5	1479.2	1464.7	1454.4
40°	1456.6	1439.9	1406.6	1388.1	1379.7
42.5°	1383.9	1367.2	1334.2	1313.3	1300.9
45°	1305.1	1290.6	1259.3	1236.7	1228.3
47.5°	1228.3	1213.8	1180.5	1157.6	1145.3
50°	1147.3	1136.9	1107.9	1078.9	1068.5
52.5°	1068.5	1054.0	1027.1	1004.2	989.7
55°	987.7	975.2	950.3	925.4	915.0
57.5°	906.7	896.4	869.3	844.4	836.1
60°	825.7	817.5	788.5	765.6	759.5
62.5°	746.9	732.4	711.7	691.0	682.6
65°	666.1	653.5	632.9	614.2	603.8
67.5°	583.1	572.6	554.1	539.6	531.2
70°	506.3	498.0	479.2	464.7	456.5
72.5°	427.5	419.1	408.8	394.3	388.1
75°	348.5	344.5	333.9	321.6	325.8
77.5°	278.1	269.7	265.5	259.3	253.2
80°	207.6	205.4	201.2	195.0	190.8
82.5°	141.1	141.1	139.1	130.8	130.8
85°	85.0	83.0	81.0	74.6	72.6
87.5°	37.4	33.3	29.1	22.9	20.7
90°	0.6	7.0	11.6	14.6	15.6
92.5°	14.6	12.2	13.9	15.1	15.6
95°	37.7	18.5	22.6	25.6	25.0
97.5°	67.9	20.4	29.5	31.4	31.9
100°	102.7	23.2	33.1	37.7	38.9
102.5°	141.0	139.9	34.2	40.6	42.4
105°	176.4	193.8	35.4	41.7	44.1
107.5°	217.6	232.1	36.6	42.9	45.3
110°	257.1	269.3	101.6	43.6	45.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	294.3	304.7	294.8	44.7	46.4
115°	333.7	343.6	358.1	89.4	47.6
117.5°	368.0	379.5	389.4	306.4	154.4
120°	406.2	414.9	425.4	432.4	354.0
122.5°	438.7	448.1	459.7	463.1	463.7
125°	471.8	479.3	490.4	494.5	496.2
127.5°	502.0	510.1	518.9	524.7	525.2
130°	530.4	539.8	546.1	552.5	552.0
132.5°	559.4	567.0	573.4	578.6	578.1
135°	583.8	593.2	598.3	604.2	603.0
137.5°	609.3	616.3	622.2	628.0	626.2
140°	634.3	639.0	645.3	650.5	647.7
142.5°	655.3	659.3	666.9	671.5	668.6
145°	677.3	676.7	686.6	690.6	687.7
147.5°	696.4	694.7	704.6	707.4	705.1
150°	715.0	711.0	720.3	723.7	720.8
152.5°	730.6	726.0	734.7	738.2	734.2
155°	745.8	740.6	747.5	751.0	746.4
157.5°	758.0	753.4	758.6	762.6	758.0
160°	768.4	764.9	768.4	771.9	767.8
162.5°	777.7	774.2	777.1	781.2	775.9
165°	785.8	782.4	784.1	788.1	784.1
167.5°	792.2	788.7	790.4	794.6	789.3
170°	797.4	793.9	795.1	799.2	793.9
172.5°	800.9	797.4	798.6	802.6	797.4
175°	803.7	799.7	800.9	804.9	799.2
177.5°	804.9	800.9	801.5	805.6	800.3
180°	802.1	802.1	802.1	802.1	802.1

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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	12.12	13.19	12.88	13.98	14.93	11.68	12.75	12.44	13.54	14.49
	3H	13.79	14.75	14.57	15.55	16.53	13.31	14.27	14.08	15.07	16.05
	4H	14.38	15.29	15.18	16.10	17.09	13.90	14.81	14.69	15.61	16.61
	6H	14.79	15.63	15.60	16.44	17.45	14.30	15.14	15.11	15.95	16.96
	8H	14.90	15.70	15.71	16.53	17.54	14.41	15.21	15.22	16.04	17.05
	12H	14.95	15.71	15.77	16.54	17.58	14.45	15.22	15.28	16.04	17.08
4H	2H	12.60	13.51	13.40	14.32	15.31	12.25	13.16	13.05	13.97	14.96
	3H	14.48	15.24	15.29	16.08	17.09	14.08	14.84	14.89	15.68	16.69
	4H	15.20	15.89	16.02	16.73	17.77	14.78	15.47	15.61	16.31	17.35
	6H	15.72	16.32	16.56	17.18	18.22	15.30	15.90	16.14	16.76	17.80
	8H	15.87	16.43	16.72	17.29	18.35	15.44	16.00	16.29	16.86	17.92
	12H	15.95	16.46	16.82	17.33	18.40	15.51	16.02	16.38	16.90	17.96
8H	4H	15.41	15.97	16.25	16.82	17.88	15.04	15.60	15.88	16.45	17.51
	6H	16.04	16.50	16.91	17.40	18.46	15.66	16.13	16.54	17.03	18.08
	8H	16.26	16.67	17.14	17.56	18.64	15.88	16.29	16.76	17.18	18.26
	12H	16.40	16.76	17.28	17.64	18.77	16.00	16.36	16.88	17.24	18.37
12H	4H	15.40	15.91	16.27	16.78	17.85	15.04	15.55	15.91	16.42	17.49
	6H	16.07	16.48	16.95	17.38	18.45	15.71	16.12	16.59	17.01	18.09
	8H	16.32	16.68	17.20	17.57	18.69	15.95	16.31	16.83	17.19	18.32