

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: P908671

Luminaire Tested: DFN2DIP-PN4F0-050D120US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908671
REPORT IS A COMBINATION OF REPORTS P901276 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-050D120US840-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

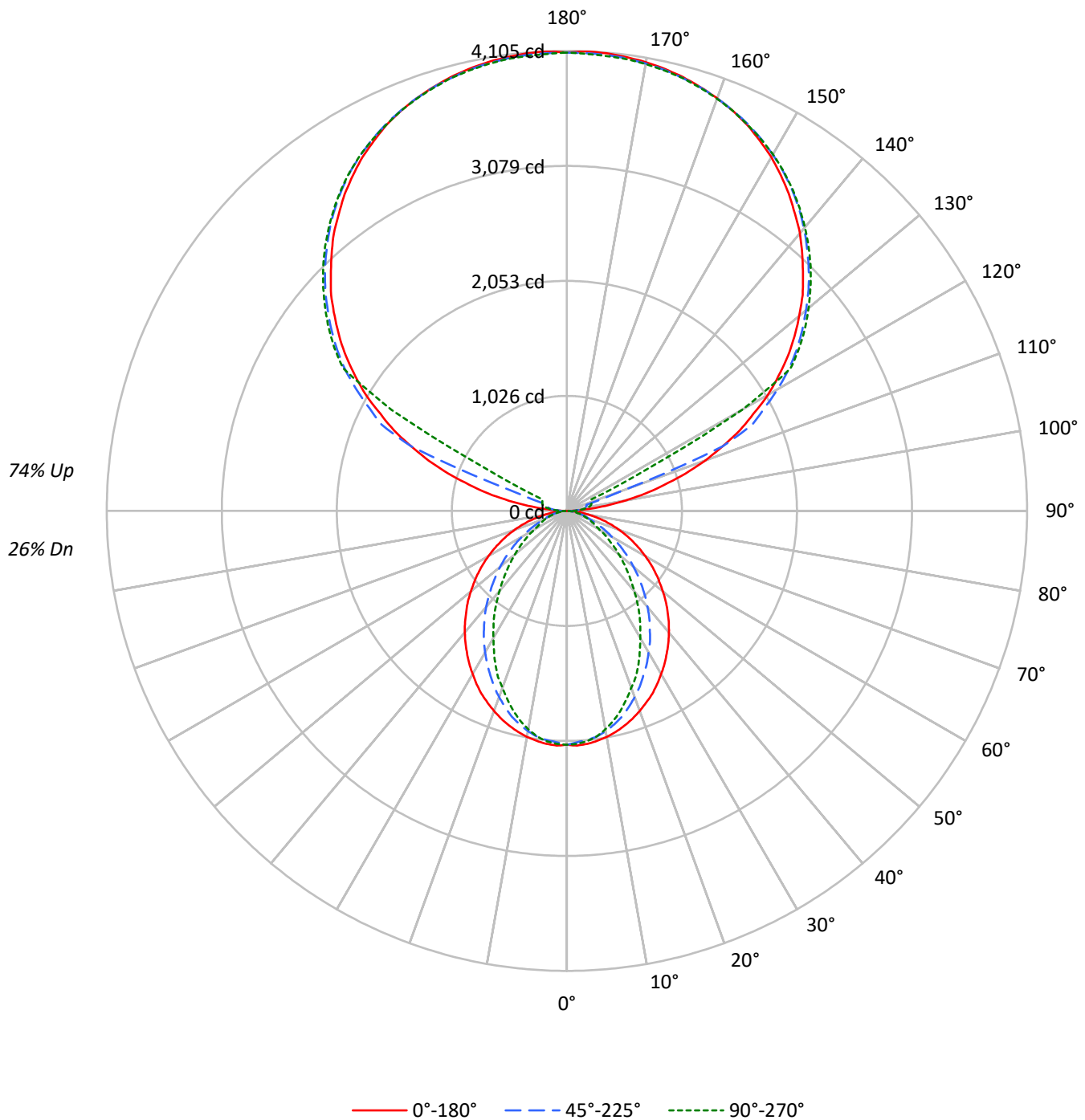
Lumens per Lamp: N/A
Luminaire Lumens: 16289.1 lumens
Efficiency: N/A
Efficacy: 110.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 147.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	102	102	102	102	91	91	91	91	70	70	70	52	52	52	34	34	34
1	93	89	85	82	83	79	76	74	62	60	58	46	44	43	31	30	29
2	85	78	72	67	75	70	65	61	54	51	48	40	38	36	27	26	25
3	77	68	62	56	69	61	56	51	48	44	41	36	33	31	24	23	22
4	71	61	53	47	63	54	48	43	43	38	35	32	29	27	22	20	19
5	65	54	46	41	58	49	42	37	38	34	30	29	26	23	20	18	17
6	60	48	41	35	53	44	37	32	35	30	26	26	23	20	18	16	15
7	55	44	36	31	49	39	33	28	31	27	23	24	20	18	17	15	13
8	51	39	32	27	46	36	29	25	28	24	20	22	18	16	15	13	12
9	48	36	29	24	42	33	26	22	26	21	18	20	17	14	14	12	11
10	44	33	26	21	40	30	24	20	24	19	16	18	15	13	13	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1523	1523	1523
5°	1526	1499	1509
10°	1511	1470	1460
15°	1490	1422	1385
20°	1462	1355	1292
25°	1434	1280	1202
30°	1396	1203	1088
35°	1359	1121	988
40°	1322	1035	873
45°	1278	940	769
50°	1232	844	667
55°	1185	742	570
60°	1130	635	469
65°	1067	526	423
70°	991	424	383
75°	895	375	349
80°	756	315	303
85°	527	212	230

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2181 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.6	1.2
10°-20°	536.9	3.3
20°-30°	753.8	4.6
30°-40°	821.7	5.0
40°-50°	755.2	4.6
50°-60°	593.1	3.6
60°-70°	386.1	2.4
70°-80°	198.7	1.2
80°-90°	57.9	0.4
90°-100°	134.9	0.8
100°-110°	502.7	3.1
110°-120°	1333.3	8.2
120°-130°	2211.4	13.6
130°-140°	2349.0	14.4
140°-150°	2183.2	13.4
150°-160°	1755.2	10.8
160°-170°	1131.0	6.9
170°-180°	389.3	2.4
0°-30°	1486.3	9.1
0°-40°	2308.0	14.2
0°-60°	3656.4	22.4
0°-90°	4299.1	26.4
90°-120°	1970.9	12.1
90°-150°	8714.5	53.5
90°-180°	11990.0	73.6
0°-180°	16289.1	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°	3	35	59	74	80	15
95°	192	94	115	130	127	228
105°	900	989	181	213	225	961
115°	1702	1752	1826	456	243	1675
125°	2406	2444	2501	2521	2530	2146
135°	2977	3025	3051	3081	3075	2300
145°	3454	3451	3501	3522	3507	2160
155°	3803	3776	3812	3829	3806	1752
165°	4007	3989	3998	4019	3998	1132
175°	4098	4078	4084	4105	4075	390
180°	4090	4090	4090	4090	4090	

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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°	2.8	35.4	59.1	74.1	79.8
92.5°	74.1	62.2	71.0	77.0	79.8
95°	192.2	94.5	115.2	130.4	127.2
97.5°	346.2	103.7	150.8	159.9	162.7
100°	523.9	118.5	168.6	192.2	198.2
102.5°	719.0	713.4	174.6	207.0	216.1
105°	899.6	988.6	180.7	213.0	224.9
107.5°	1109.7	1183.6	186.6	218.9	230.9
110°	1311.1	1373.0	518.0	222.1	233.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1500.6	1553.6	1503.4	227.7	236.8
115°	1701.5	1751.8	1825.9	455.8	242.9
117.5°	1876.2	1935.3	1985.9	1562.4	787.2
120°	2071.6	2115.9	2169.3	2204.8	1805.2
122.5°	2237.2	2284.6	2344.0	2361.6	2364.7
125°	2405.8	2444.5	2500.7	2521.4	2530.2
127.5°	2559.7	2601.2	2645.8	2675.3	2678.2
130°	2704.8	2752.3	2784.6	2817.3	2814.5
132.5°	2852.8	2891.4	2923.8	2950.5	2947.7
135°	2977.2	3024.6	3051.0	3080.9	3074.9
137.5°	3107.3	3142.7	3172.6	3202.1	3193.3
140°	3234.5	3258.3	3290.6	3317.4	3302.7
142.5°	3341.2	3362.0	3400.3	3423.8	3409.1
145°	3453.7	3450.6	3500.8	3521.6	3506.8
147.5°	3551.1	3542.3	3592.6	3607.3	3595.7
150°	3645.9	3625.2	3672.7	3690.3	3675.5
152.5°	3725.7	3702.2	3746.5	3764.4	3743.7
155°	3802.6	3776.3	3811.8	3829.4	3805.9
157.5°	3864.9	3841.3	3868.1	3888.8	3864.9
160°	3918.3	3900.4	3918.3	3935.8	3915.1
162.5°	3965.4	3947.9	3962.6	3983.3	3956.7
165°	4006.8	3989.3	3998.1	4018.9	3998.1
167.5°	4039.6	4021.6	4030.8	4051.5	4024.8
170°	4066.2	4048.3	4054.3	4075.0	4048.3
172.5°	4083.8	4066.2	4072.3	4093.0	4066.2
175°	4098.5	4077.8	4083.8	4104.6	4075.0
177.5°	4104.6	4083.8	4087.0	4107.7	4081.1
180°	4089.9	4089.9	4089.9	4089.9	4089.9

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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	5.86	6.53	7.00	7.66	9.23	1.83	2.50	2.97	3.62	5.20
	3H	7.53	8.13	8.68	9.26	10.85	3.00	3.60	4.15	4.74	6.33
	4H	8.13	8.70	9.29	9.84	11.43	3.45	4.02	4.61	5.15	6.75
	6H	8.55	9.07	9.71	10.21	11.82	3.76	4.28	4.93	5.42	7.03
	8H	8.67	9.17	9.84	10.32	11.92	3.85	4.34	5.01	5.50	7.10
	12H	8.73	9.20	9.90	10.35	11.97	3.89	4.36	5.06	5.50	7.12
4H	2H	5.86	6.43	7.03	7.56	9.16	2.40	2.97	3.57	4.11	5.70
	3H	7.68	8.15	8.85	9.31	10.92	3.74	4.21	4.91	5.38	6.98
	4H	8.37	8.80	9.54	9.95	11.58	4.28	4.72	5.45	5.87	7.49
	6H	8.88	9.25	10.05	10.42	12.04	4.69	5.07	5.87	6.24	7.85
	8H	9.05	9.40	10.22	10.56	12.19	4.82	5.17	6.00	6.33	7.96
	12H	9.14	9.45	10.33	10.63	12.27	4.88	5.19	6.07	6.37	8.01
8H	4H	8.32	8.67	9.50	9.83	11.47	4.55	4.90	5.73	6.06	7.70
	6H	8.89	9.17	10.08	10.38	12.01	5.07	5.35	6.26	6.56	8.19
	8H	9.10	9.35	10.30	10.54	12.19	5.26	5.51	6.46	6.69	8.34
	12H	9.24	9.46	10.44	10.64	12.32	5.37	5.59	6.57	6.77	8.45
12H	4H	8.27	8.58	9.46	9.76	11.39	4.55	4.87	5.74	6.04	7.68
	6H	8.86	9.11	10.06	10.29	11.94	5.12	5.36	6.32	6.55	8.20
	8H	9.08	9.29	10.28	10.48	12.16	5.32	5.54	6.52	6.72	8.40

END OF REPORT