

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: P910225

Luminaire Tested: DFN2DIP-TR4F0-100D060US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910225
REPORT IS A COMBINATION OF REPORTS P901938 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-100D060US840-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

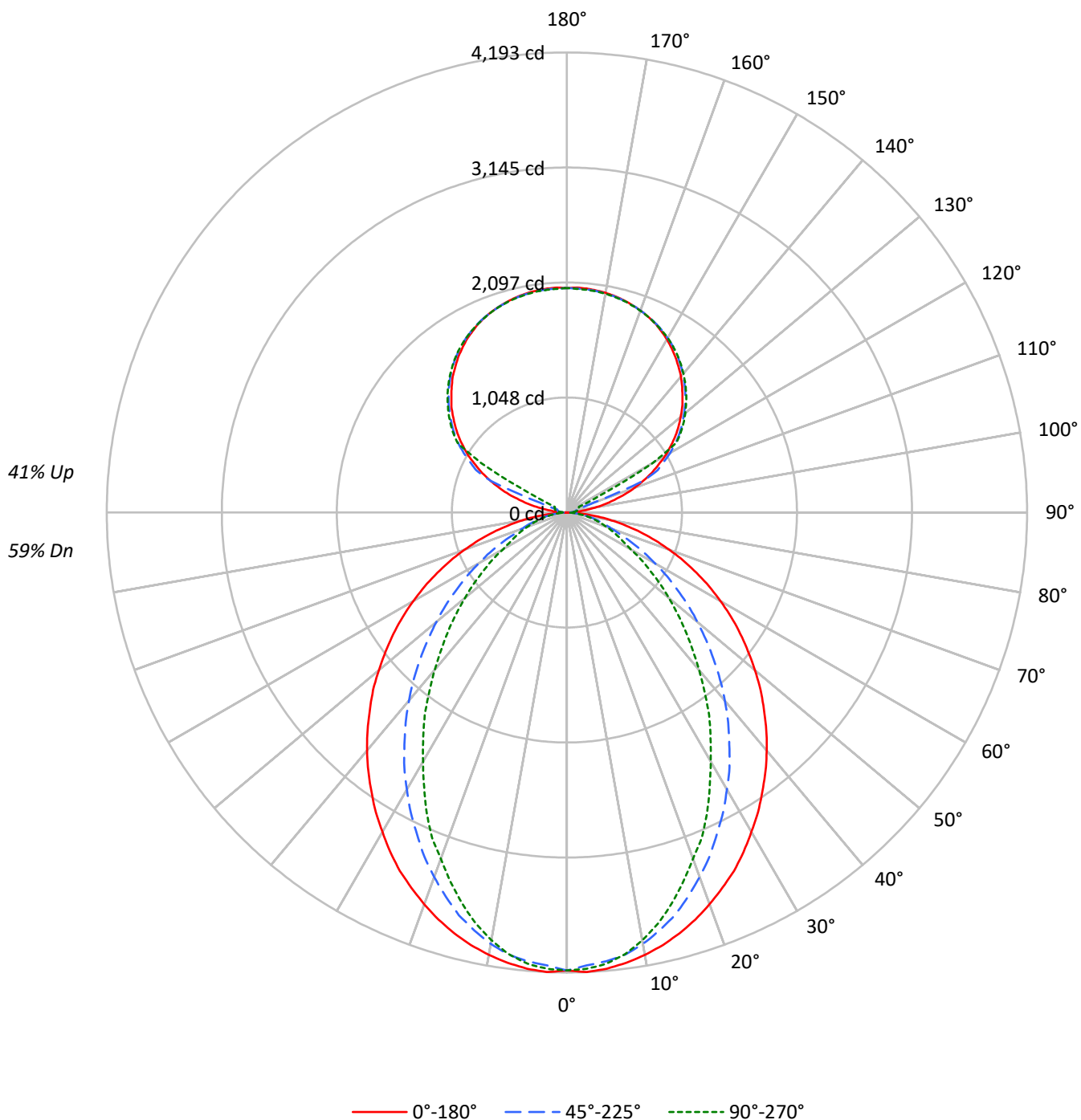
Lumens per Lamp: N/A
Luminaire Lumens: 14582.4 lumens
Efficiency: N/A
Efficacy: 100.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 145.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	55
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	51	49	48
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	43	41
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32
6	66	54	46	40	61	51	44	38	45	39	35	40	35	32	35	31	28
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	23	21
10	50	38	31	26	46	36	29	25	32	27	23	29	24	21	25	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3316	3316	3316
5°	3321	3263	3284
10°	3288	3199	3177
15°	3243	3093	3012
20°	3183	2947	2809
25°	3122	2784	2613
30°	3040	2617	2365
35°	2959	2436	2147
40°	2877	2250	1896
45°	2781	2043	1670
50°	2683	1835	1448
55°	2580	1612	1236
60°	2461	1378	1017
65°	2324	1141	915
70°	2158	920	828
75°	1949	811	753
80°	1646	680	653
85°	1148	454	490

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2781 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	391.2	2.7
10°-20°	1073.8	7.4
20°-30°	1507.6	10.3
30°-40°	1643.4	11.3
40°-50°	1510.5	10.4
50°-60°	1186.3	8.1
60°-70°	772.1	5.3
70°-80°	397.5	2.7
80°-90°	105.1	0.7
90°-100°	67.4	0.5
100°-110°	251.4	1.7
110°-120°	666.7	4.6
120°-130°	1105.7	7.6
130°-140°	1174.5	8.1
140°-150°	1091.6	7.5
150°-160°	877.6	6.0
160°-170°	565.5	3.9
170°-180°	194.6	1.3
0°-30°	2972.6	20.4
0°-40°	4616.1	31.7
0°-60°	7312.8	50.1
0°-90°	8587.4	58.9
90°-120°	985.5	6.8
90°-150°	4357.2	29.9
90°-180°	5995.0	41.1
0°-180°	14582.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4174	4174	4174	4174	4174	
5°	4174	4155	4106	4140	4128	396
15°	3970	3928	3800	3728	3690	1119
25°	3604	3482	3233	3078	3022	1657
35°	3105	2912	2580	2342	2259	1943
45°	2538	2285	1889	1620	1530	1960
55°	1930	1636	1228	1001	929	1725
65°	1303	997	657	529	517	1292
75°	695	430	302	276	272	735
85°	162	83	72	72	72	186
90°	1	18	30	37	40	14
95°	96	47	58	65	64	114
105°	450	494	90	106	112	481
115°	851	876	913	228	121	838
125°	1203	1222	1250	1261	1265	1073
135°	1489	1512	1526	1540	1537	1150
145°	1727	1725	1750	1761	1753	1080
155°	1901	1888	1906	1915	1903	876
165°	2004	1995	1999	2009	1999	566
175°	2049	2039	2042	2052	2038	195
180°	2045	2045	2045	2045	2045	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4173.8	4173.8	4173.8	4173.8	4173.8
2.5°	4192.6	4173.8	4132.1	4170.1	4162.6
5°	4173.8	4154.9	4105.6	4139.7	4128.4
7.5°	4139.7	4117.2	4064.3	4079.1	4060.4
10°	4094.4	4067.9	3992.6	3981.0	3958.6
12.5°	4037.9	4003.8	3901.6	3879.2	3837.5
15°	3969.8	3928.1	3799.8	3728.1	3690.5
17.5°	3890.4	3829.9	3671.3	3588.3	3527.8
20°	3799.8	3724.1	3535.3	3441.2	3357.8
22.5°	3701.7	3614.7	3395.5	3267.3	3210.8
25°	3603.5	3482.5	3233.2	3078.5	3021.6
27.5°	3486.5	3357.8	3082.1	2904.6	2817.6
30°	3361.8	3217.9	2915.8	2723.5	2621.3
32.5°	3240.9	3066.9	2757.5	2530.7	2436.1
35°	3104.9	2912.3	2580.0	2342.0	2258.6
37.5°	2972.7	2764.7	2413.7	2152.8	2058.6
40°	2832.9	2606.5	2239.8	1971.7	1873.5
42.5°	2689.4	2447.7	2066.3	1786.6	1692.3
45°	2538.3	2285.0	1888.8	1620.2	1529.6
47.5°	2394.9	2126.8	1718.8	1450.3	1367.4
50°	2236.1	1968.0	1552.5	1291.6	1212.6
52.5°	2081.0	1797.8	1393.8	1144.5	1072.8
55°	1930.0	1635.5	1227.5	1001.1	929.3
57.5°	1775.3	1473.1	1080.5	868.8	808.3
60°	1616.6	1314.4	925.3	733.0	672.5
62.5°	1461.9	1159.7	793.0	612.0	581.9
65°	1303.2	997.0	657.2	529.0	517.4
67.5°	1152.2	846.0	529.0	464.4	453.2
70°	993.4	698.9	438.0	400.3	385.2
72.5°	842.3	562.6	366.3	336.2	328.6
75°	694.9	430.4	302.2	275.7	272.1
77.5°	547.9	305.8	238.0	222.8	215.2
80°	411.5	219.2	181.2	166.3	166.3
82.5°	286.9	147.4	124.6	117.0	117.0
85°	162.3	82.9	71.7	71.7	71.7
87.5°	60.5	30.1	30.1	26.5	26.5
90°	1.4	17.8	29.5	37.1	39.9
92.5°	37.1	31.1	35.4	38.5	39.9
95°	96.1	47.3	57.7	65.2	63.6
97.5°	173.1	51.8	75.3	80.0	81.4
100°	262.0	59.2	84.3	96.1	99.1
102.5°	359.5	356.7	87.4	103.5	108.1
105°	449.8	494.2	90.3	106.4	112.5
107.5°	554.9	591.8	93.3	109.5	115.4
110°	655.6	686.5	259.0	111.1	116.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	750.2	776.8	751.6	113.8	118.5
115°	850.8	876.0	913.0	227.9	121.4
117.5°	938.1	967.7	992.9	781.2	393.5
120°	1035.8	1057.9	1084.7	1102.4	902.6
122.5°	1118.5	1142.3	1171.9	1180.7	1182.4
125°	1203.0	1222.2	1250.3	1260.7	1265.1
127.5°	1279.9	1300.6	1322.9	1337.7	1339.1
130°	1352.4	1376.1	1392.3	1408.7	1407.2
132.5°	1426.4	1445.7	1461.9	1475.2	1473.8
135°	1488.6	1512.4	1525.5	1540.4	1537.4
137.5°	1553.6	1571.4	1586.3	1601.0	1596.7
140°	1617.2	1629.2	1645.4	1658.7	1651.3
142.5°	1670.6	1681.0	1700.2	1711.9	1704.6
145°	1726.9	1725.3	1750.4	1760.8	1753.4
147.5°	1775.5	1771.1	1796.2	1803.6	1797.9
150°	1823.0	1812.6	1836.3	1845.1	1837.8
152.5°	1862.9	1851.1	1873.2	1882.2	1871.8
155°	1901.4	1888.1	1905.9	1914.7	1902.9
157.5°	1932.5	1920.7	1934.0	1944.4	1932.5
160°	1959.1	1950.2	1959.1	1967.9	1957.6
162.5°	1982.7	1973.9	1981.3	1991.7	1978.3
165°	2003.5	1994.7	1999.0	2009.4	1999.0
167.5°	2019.7	2010.8	2015.4	2025.8	2012.4
170°	2033.2	2024.2	2027.2	2037.5	2024.2
172.5°	2041.9	2033.2	2036.1	2046.5	2033.2
175°	2049.3	2038.9	2041.9	2052.2	2037.5
177.5°	2052.2	2041.9	2043.5	2053.9	2040.5
180°	2044.9	2044.9	2044.9	2044.9	2044.9

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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	12.10	13.01	12.98	13.91	15.05	8.07	8.98	8.96	9.88	11.02
	3H	13.78	14.59	14.68	15.50	16.67	9.27	10.08	10.16	10.99	12.16
	4H	14.39	15.16	15.31	16.08	17.25	9.72	10.49	10.63	11.40	12.58
	6H	14.82	15.53	15.74	16.45	17.64	10.05	10.75	10.97	11.67	12.86
	8H	14.95	15.62	15.88	16.56	17.75	10.14	10.81	11.07	11.75	12.94
	12H	15.01	15.65	15.95	16.58	17.80	10.19	10.83	11.12	11.76	12.97
4H	2H	12.13	12.89	13.04	13.81	14.98	8.68	9.44	9.59	10.36	11.54
	3H	13.96	14.60	14.89	15.55	16.74	10.03	10.67	10.96	11.62	12.81
	4H	14.66	15.24	15.60	16.18	17.40	10.59	11.17	11.52	12.11	13.32
	6H	15.18	15.68	16.13	16.64	17.86	11.01	11.51	11.96	12.47	13.69
	8H	15.35	15.82	16.31	16.78	18.01	11.14	11.61	12.10	12.57	13.80
	12H	15.45	15.87	16.42	16.85	18.08	11.21	11.63	12.18	12.61	13.84
8H	4H	14.63	15.10	15.58	16.06	17.29	10.87	11.34	11.83	12.30	13.53
	6H	15.20	15.59	16.18	16.59	17.81	11.39	11.78	12.37	12.78	14.01
	8H	15.42	15.76	16.40	16.75	17.99	11.59	11.93	12.57	12.92	14.16
	12H	15.56	15.86	16.55	16.84	18.14	11.71	12.01	12.70	12.99	14.29
12H	4H	14.59	15.01	15.56	15.98	17.22	10.88	11.30	11.85	12.28	13.51
	6H	15.18	15.52	16.16	16.51	17.75	11.44	11.78	12.43	12.77	14.02
	8H	15.40	15.70	16.39	16.68	17.98	11.66	11.96	12.65	12.94	14.24