

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: P915668

Luminaire Tested: DFN2DIP-TR4F0-090D120US927-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915668
REPORT IS A COMBINATION OF REPORTS P900524 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-090D120US927-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

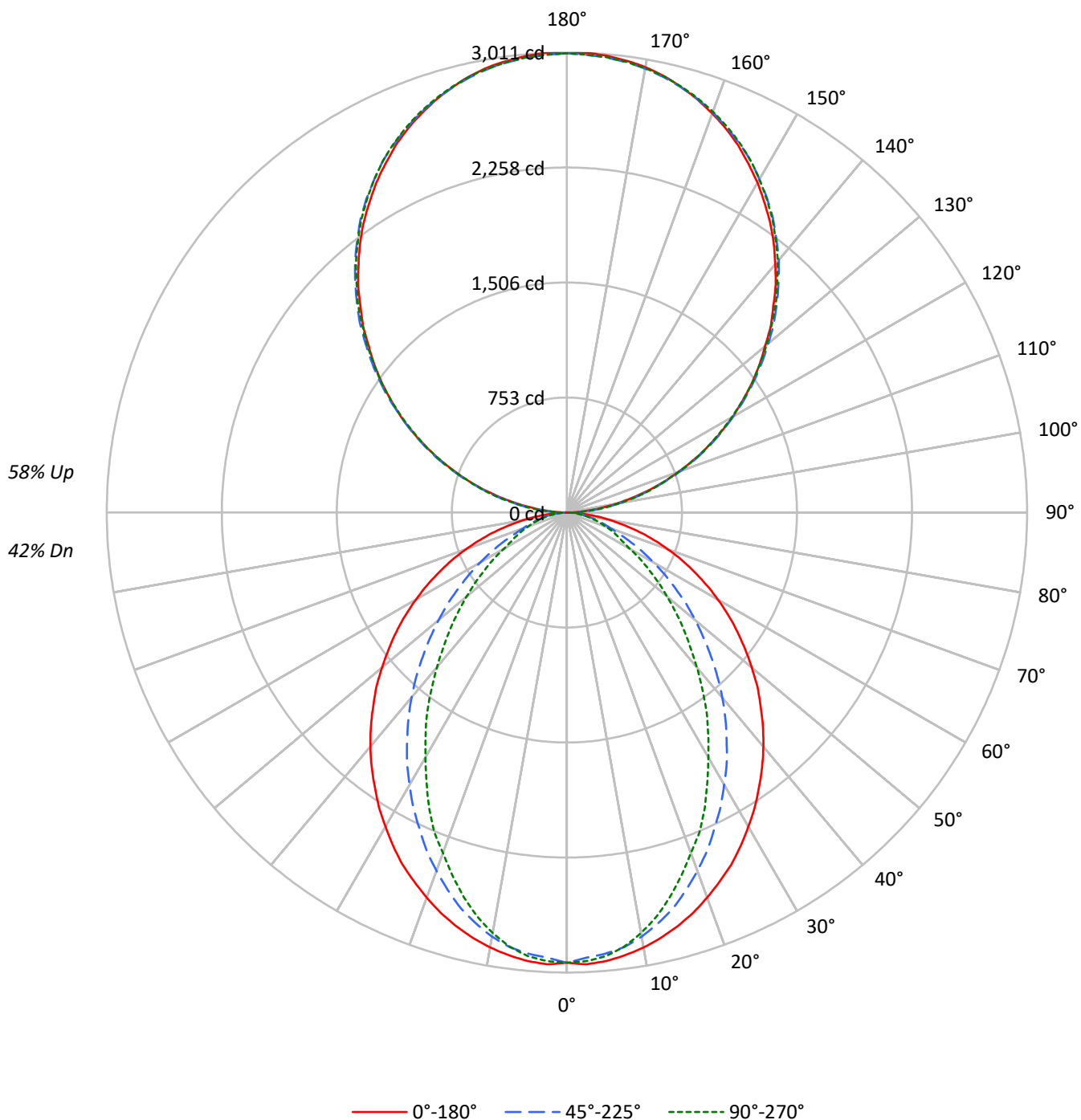
Lumens per Lamp: N/A
Luminaire Lumens: 14473.1 lumens
Efficiency: N/A
Efficacy: 80.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 178.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P915668

CATALOG NUMBER: DFN2DIP-TR4F0-090D120US927-RLLFLL

Luminous Intensity Polar Plot



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CATALOG NUMBER: DFN2DIP-TR4F0-090D120US927-RLLFLL

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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49
1	96	92	89	85	88	84	81	78	70	67	65	56	55	53	44	43	42
2	88	81	75	70	80	74	69	65	61	58	55	50	47	45	39	37	36
3	81	72	65	59	73	66	60	55	55	50	47	44	41	39	35	33	31
4	74	64	56	50	67	58	52	47	49	44	40	40	36	33	31	29	27
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	28	26	24
6	63	51	43	38	57	47	40	35	40	34	30	33	29	26	26	23	21
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	24	21	19
8	54	42	34	29	49	39	32	28	33	28	24	27	23	21	22	19	17
9	50	38	31	26	46	36	29	25	30	25	22	25	21	19	20	18	16
10	47	35	28	24	43	33	26	22	28	23	19	23	19	17	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2341	2341	2341
5°	2345	2304	2318
10°	2322	2259	2243
15°	2290	2184	2126
20°	2247	2081	1983
25°	2204	1966	1845
30°	2146	1847	1669
35°	2089	1720	1516
40°	2031	1589	1339
45°	1964	1443	1179
50°	1894	1295	1023
55°	1821	1138	872
60°	1737	973	718
65°	1640	806	646
70°	1523	650	585
75°	1376	572	532
80°	1163	480	461
85°	810	320	346

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2343 cd/sqm

TEST NUMBER: P915668

CATALOG NUMBER: DFN2DIP-TR4F0-090D120US927-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	276.2	1.9
10°-20°	758.1	5.2
20°-30°	1064.4	7.4
30°-40°	1160.3	8.0
40°-50°	1066.4	7.4
50°-60°	837.5	5.8
60°-70°	545.1	3.8
70°-80°	280.6	1.9
80°-90°	80.2	0.6
90°-100°	186.0	1.3
100°-110°	591.1	4.1
110°-120°	1011.6	7.0
120°-130°	1330.4	9.2
130°-140°	1493.3	10.3
140°-150°	1464.3	10.1
150°-160°	1228.4	8.5
160°-170°	814.6	5.6
170°-180°	284.7	2.0
0°-30°	2098.7	14.5
0°-40°	3258.9	22.5
0°-60°	5162.8	35.7
0°-90°	6068.7	41.9
90°-120°	1788.7	12.4
90°-150°	6076.6	42.0
90°-180°	8404.0	58.1
0°-180°	14473.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2947	2947	2947	2947	2947	
5°	2947	2933	2899	2923	2915	279
15°	2803	2773	2683	2632	2606	790
25°	2544	2459	2283	2173	2133	1170
35°	2192	2056	1822	1653	1595	1372
45°	1792	1613	1333	1144	1080	1384
55°	1363	1155	867	707	656	1218
65°	920	704	464	373	365	912
75°	491	304	213	195	192	519
85°	114	58	51	51	51	132
90°	3	33	89	83	86	14
95°	132	158	162	162	158	147
105°	546	553	558	563	563	576
115°	1015	1030	1025	1022	1015	1004
125°	1476	1499	1492	1484	1481	1319
135°	1910	1938	1943	1940	1933	1476
145°	2318	2337	2351	2354	2344	1449
155°	2651	2658	2667	2679	2671	1220
165°	2884	2881	2881	2900	2887	814
175°	3001	2994	2988	3006	2991	285
180°	3006	3006	3006	3006	3006	

TEST NUMBER: P915668

CATALOG NUMBER: DFN2DIP-TR4F0-090D120US927-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2946.7	2946.7	2946.7	2946.7	2946.7
2.5°	2960.0	2946.7	2917.2	2944.1	2938.8
5°	2946.7	2933.4	2898.6	2922.6	2914.7
7.5°	2922.6	2906.8	2869.4	2879.9	2866.6
10°	2890.7	2872.0	2818.8	2810.6	2794.7
12.5°	2850.7	2826.7	2754.6	2738.7	2709.3
15°	2802.7	2773.3	2682.7	2632.0	2605.5
17.5°	2746.7	2704.0	2591.9	2533.3	2490.6
20°	2682.7	2629.2	2495.9	2429.5	2370.6
22.5°	2613.4	2552.0	2397.2	2306.7	2266.8
25°	2544.1	2458.6	2282.7	2173.4	2133.3
27.5°	2461.5	2370.6	2176.0	2050.6	1989.2
30°	2373.5	2271.9	2058.6	1922.8	1850.6
32.5°	2288.0	2165.2	1946.8	1786.7	1719.9
35°	2192.1	2056.0	1821.5	1653.4	1594.6
37.5°	2098.7	1951.9	1704.1	1519.9	1453.4
40°	2000.0	1840.2	1581.3	1392.0	1322.7
42.5°	1898.7	1728.1	1458.7	1261.3	1194.8
45°	1792.1	1613.3	1333.4	1143.8	1079.9
47.5°	1690.8	1501.5	1213.5	1023.9	965.4
50°	1578.7	1389.4	1096.1	911.9	856.1
52.5°	1469.3	1269.2	984.0	808.0	757.4
55°	1362.6	1154.6	866.6	706.8	656.1
57.5°	1253.4	1040.1	762.8	613.4	570.7
60°	1141.3	928.0	653.3	517.5	474.8
62.5°	1032.1	818.8	559.9	432.1	410.8
65°	920.0	703.9	464.0	373.4	365.3
67.5°	813.4	597.2	373.4	327.9	320.0
70°	701.4	493.4	309.3	282.7	271.9
72.5°	594.7	397.2	258.6	237.3	232.0
75°	490.6	303.9	213.3	194.6	192.1
77.5°	386.7	215.9	168.0	157.3	151.9
80°	290.6	154.8	127.9	117.4	117.4
82.5°	202.6	104.1	88.0	82.6	82.6
85°	114.5	58.5	50.6	50.6	50.6
87.5°	42.7	21.2	21.2	18.7	18.7
90°	2.7	32.6	88.8	83.4	86.1
92.5°	56.2	76.1	78.8	81.6	81.6
95°	132.3	157.7	162.2	162.2	157.7
97.5°	220.2	243.8	253.8	253.8	253.8
100°	321.8	342.6	349.8	349.8	347.1
102.5°	428.7	444.1	454.1	456.9	454.1
105°	545.7	552.9	558.3	562.8	562.8
107.5°	661.6	672.6	672.6	674.3	661.6
110°	774.0	788.5	788.5	788.5	781.3

TEST NUMBER: P915668

CATALOG NUMBER: DFN2DIP-TR4F0-090D120US927-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	895.5	910.9	908.2	900.9	895.5
115°	1015.1	1029.7	1025.1	1022.4	1015.1
117.5°	1133.8	1153.8	1141.1	1133.8	1126.6
120°	1253.5	1273.4	1253.5	1253.5	1245.4
122.5°	1362.3	1387.7	1375.0	1367.7	1362.3
125°	1476.5	1499.1	1491.9	1483.8	1481.0
127.5°	1588.0	1616.0	1606.1	1595.2	1588.0
130°	1692.2	1724.8	1720.3	1714.8	1704.9
132.5°	1809.1	1834.5	1836.3	1823.6	1816.4
135°	1909.7	1937.8	1943.3	1940.5	1933.3
137.5°	2022.1	2044.8	2049.3	2047.5	2036.6
140°	2120.9	2143.6	2156.2	2156.2	2146.3
142.5°	2222.5	2245.1	2252.3	2255.0	2245.1
145°	2318.5	2336.6	2351.1	2353.9	2343.9
147.5°	2404.6	2427.2	2438.2	2442.7	2432.7
150°	2493.5	2508.8	2518.8	2527.0	2518.8
152.5°	2572.3	2587.7	2600.4	2610.4	2600.4
155°	2651.1	2658.4	2666.6	2679.2	2671.1
157.5°	2719.2	2724.5	2729.1	2747.2	2734.5
160°	2779.8	2785.3	2788.0	2803.4	2792.5
162.5°	2836.0	2836.0	2838.8	2856.0	2843.3
165°	2884.1	2881.4	2881.4	2899.5	2886.8
167.5°	2927.6	2919.4	2919.4	2937.6	2924.9
170°	2960.2	2952.9	2950.2	2968.4	2952.9
172.5°	2982.9	2975.6	2972.9	2991.0	2975.6
175°	3001.0	2993.7	2988.3	3006.4	2991.0
177.5°	3011.0	3003.7	2998.2	3013.7	2998.2
180°	3006.4	3006.4	3006.4	3006.4	3006.4

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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	9.29	10.06	10.32	11.09	12.48	5.27	6.03	6.30	7.07	8.45
	3H	10.96	11.65	12.00	12.69	14.10	6.45	7.14	7.49	8.18	9.58
	4H	11.57	12.22	12.62	13.26	14.68	6.90	7.55	7.95	8.59	10.00
	6H	11.99	12.59	13.05	13.64	15.06	7.22	7.82	8.28	8.86	10.29
	8H	12.11	12.68	13.18	13.75	15.16	7.31	7.88	8.37	8.94	10.36
	12H	12.17	12.71	13.24	13.77	15.21	7.35	7.89	8.42	8.95	10.39
4H	2H	9.30	9.95	10.36	11.00	12.41	5.85	6.50	6.91	7.55	8.96
	3H	11.13	11.67	12.19	12.74	14.16	7.20	7.74	8.26	8.81	10.24
	4H	11.82	12.31	12.89	13.37	14.82	7.75	8.24	8.82	9.30	10.75
	6H	12.33	12.75	13.41	13.84	15.28	8.16	8.59	9.24	9.67	11.11
	8H	12.50	12.90	13.58	13.98	15.43	8.29	8.69	9.37	9.77	11.22
	12H	12.59	12.95	13.69	14.04	15.50	8.35	8.71	9.45	9.80	11.26
8H	4H	11.78	12.18	12.86	13.25	14.71	8.02	8.42	9.10	9.50	10.95
	6H	12.34	12.67	13.45	13.79	15.24	8.54	8.86	9.64	9.99	11.44
	8H	12.56	12.85	13.67	13.95	15.42	8.73	9.02	9.84	10.12	11.59
	12H	12.70	12.95	13.81	14.05	15.56	8.85	9.10	9.96	10.20	11.71
12H	4H	11.73	12.09	12.83	13.18	14.64	8.02	8.38	9.12	9.47	10.93
	6H	12.32	12.61	13.43	13.71	15.18	8.59	8.87	9.70	9.98	11.45
	8H	12.54	12.79	13.65	13.89	15.40	8.80	9.05	9.91	10.15	11.66

END OF REPORT