

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: P912854

Luminaire Tested: DFN2DIP-TR4F0-070D090US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912854
REPORT IS A COMBINATION OF REPORTS P900465 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-070D090US850-FLLFLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

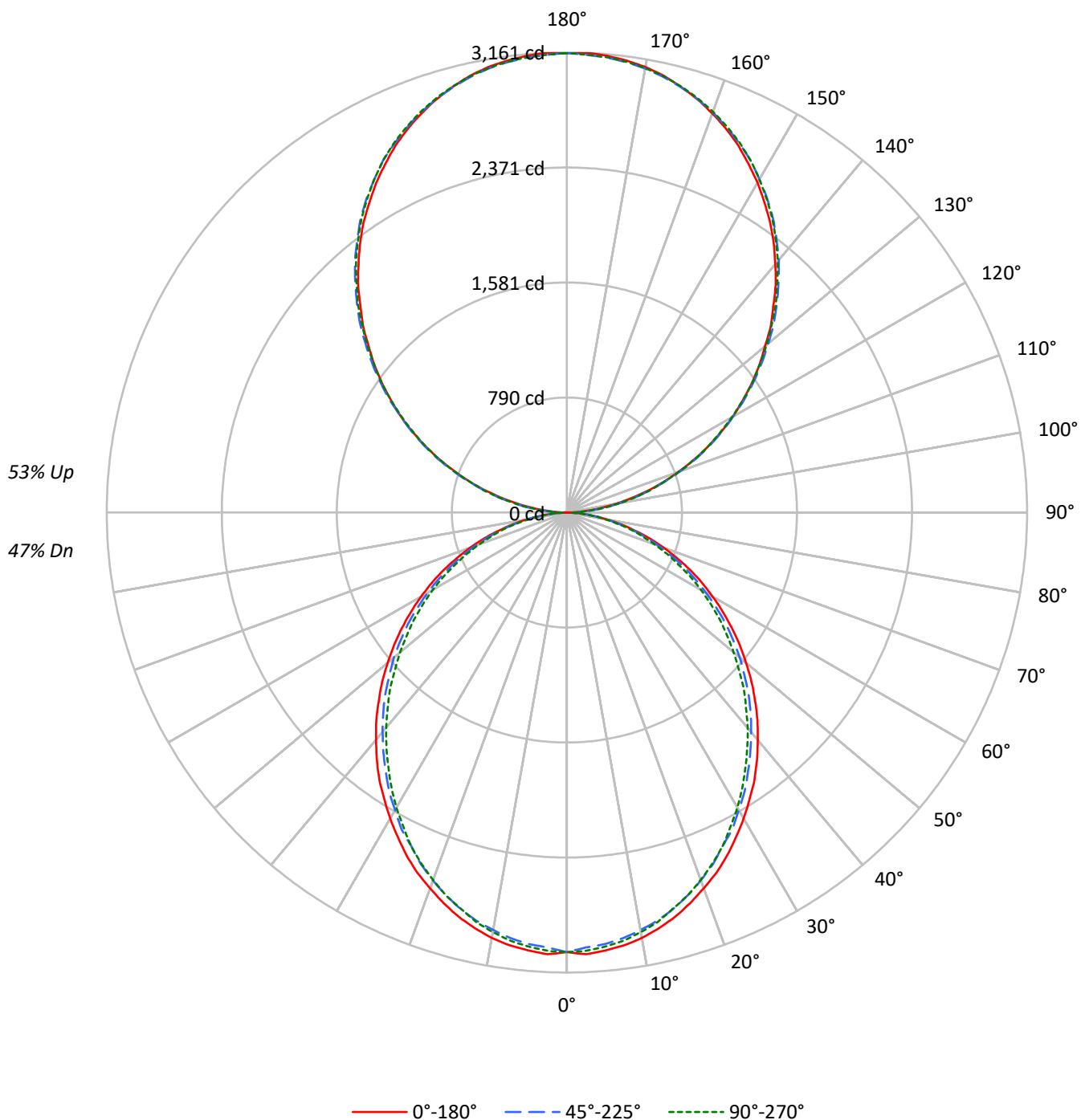
Lumens per Lamp: N/A
Luminaire Lumens: 16518.6 lumens
Efficiency: N/A
Efficacy: 124.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 133.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
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	106	106	106	106	98	98	98	98	81	81	81	67	67	67	53	53	53
1	97	93	89	85	89	85	82	79	71	69	67	59	57	55	47	46	45
2	88	81	75	70	81	75	69	65	63	59	55	51	49	46	41	39	38
3	81	71	64	58	74	66	59	54	55	50	47	45	42	39	37	34	32
4	74	63	55	49	67	58	51	46	49	44	40	41	37	34	33	30	28
5	68	56	48	42	62	52	45	39	44	38	34	36	32	29	29	26	24
6	62	50	42	36	57	47	39	34	39	34	30	33	29	25	27	24	21
7	58	45	37	32	53	42	35	30	36	30	26	30	26	23	24	21	19
8	53	41	33	28	49	38	31	27	33	27	23	27	23	20	22	19	17
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15
10	46	34	27	22	43	32	26	21	28	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2400	2400	2400
5°	2404	2366	2382
10°	2384	2334	2350
15°	2349	2296	2299
20°	2302	2242	2248
25°	2255	2179	2188
30°	2196	2119	2112
35°	2140	2049	2032
40°	2071	1978	1955
45°	2002	1907	1877
50°	1927	1833	1787
55°	1848	1747	1703
60°	1760	1644	1608
65°	1663	1538	1495
70°	1539	1409	1374
75°	1368	1254	1262
80°	1163	1058	1049
85°	842	718	695

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2460 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	284.3	1.7
10°-20°	799.9	4.8
20°-30°	1175.6	7.1
30°-40°	1365.3	8.3
40°-50°	1363.6	8.3
50°-60°	1189.1	7.2
60°-70°	879.0	5.3
70°-80°	497.3	3.0
80°-90°	140.2	0.8
90°-100°	195.3	1.2
100°-110°	620.6	3.8
110°-120°	1062.1	6.4
120°-130°	1396.8	8.5
130°-140°	1567.9	9.5
140°-150°	1537.5	9.3
150°-160°	1289.7	7.8
160°-170°	855.3	5.2
170°-180°	299.0	1.8
0°-30°	2259.8	13.7
0°-40°	3625.1	21.9
0°-60°	6177.8	37.4
0°-90°	7694.3	46.6
90°-120°	1878.1	11.4
90°-150°	6380.2	38.6
90°-180°	8824.0	53.4
0°-180°	16518.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3021	3021	3021	3021	3021	
5°	3021	3009	2977	3000	2995	287
15°	2876	2858	2820	2832	2818	810
25°	2602	2579	2530	2536	2530	1198
35°	2245	2216	2170	2152	2138	1402
45°	1827	1807	1763	1731	1720	1410
55°	1383	1365	1330	1296	1281	1236
65°	933	915	886	860	845	922
75°	488	482	467	450	456	521
85°	119	116	114	104	102	133
90°	3	34	93	88	90	16
95°	139	166	170	170	166	155
105°	573	580	586	591	591	605
115°	1066	1081	1076	1074	1066	1054
125°	1550	1574	1566	1558	1555	1385
135°	2005	2035	2040	2038	2030	1550
145°	2434	2453	2468	2471	2461	1521
155°	2784	2791	2800	2813	2805	1281
165°	3028	3025	3025	3044	3031	854
175°	3151	3143	3138	3157	3140	299
180°	3157	3157	3157	3157	3157	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3020.6	3020.6	3020.6	3020.6	3020.6
2.5°	3038.2	3023.7	2991.6	3020.6	3015.0
5°	3020.6	3009.3	2977.2	3000.3	2994.7
7.5°	3000.3	2983.0	2950.9	2974.4	2968.6
10°	2968.6	2948.2	2913.3	2936.5	2927.9
12.5°	2924.8	2907.6	2872.8	2887.2	2881.3
15°	2875.5	2858.2	2820.3	2832.1	2817.5
17.5°	2814.4	2797.2	2759.3	2773.8	2759.3
20°	2747.5	2730.4	2689.7	2698.3	2686.9
22.5°	2681.0	2654.8	2616.9	2616.9	2611.0
25°	2602.5	2579.3	2530.1	2535.6	2530.1
27.5°	2515.2	2494.9	2457.3	2448.7	2434.1
30°	2428.4	2404.9	2361.5	2352.9	2341.1
32.5°	2335.2	2318.0	2271.5	2253.9	2242.2
35°	2245.3	2216.3	2169.8	2152.2	2137.7
37.5°	2143.6	2117.4	2070.8	2050.5	2036.0
40°	2039.1	2015.7	1969.1	1943.3	1931.5
42.5°	1937.4	1914.0	1867.8	1838.5	1821.2
45°	1827.1	1806.8	1763.0	1731.3	1719.5
47.5°	1719.5	1699.2	1652.6	1620.6	1603.4
50°	1606.2	1591.6	1550.9	1510.3	1495.8
52.5°	1495.8	1475.5	1437.9	1405.9	1385.5
55°	1382.7	1365.2	1330.4	1295.5	1281.0
57.5°	1269.4	1254.8	1216.9	1182.1	1170.4
60°	1155.9	1144.5	1103.9	1071.8	1063.2
62.5°	1045.6	1025.3	996.3	967.4	955.6
65°	932.6	914.9	886.0	859.8	845.3
67.5°	816.3	801.6	775.6	755.3	743.6
70°	708.8	697.1	670.8	650.5	639.1
72.5°	598.4	586.8	572.2	551.9	543.3
75°	487.8	482.3	467.4	450.3	456.1
77.5°	389.3	377.5	371.6	363.0	354.4
80°	290.6	287.6	281.7	273.0	267.2
82.5°	197.5	197.5	194.7	183.1	183.1
85°	119.0	116.2	113.5	104.5	101.7
87.5°	52.3	46.6	40.7	32.1	28.9
90°	2.9	34.3	93.3	87.5	90.4
92.5°	59.0	80.0	82.8	85.6	85.6
95°	139.0	165.6	170.3	170.3	165.6
97.5°	231.2	256.0	266.5	266.5	266.5
100°	337.8	359.8	367.3	367.3	364.5
102.5°	450.1	466.3	476.8	479.6	476.8
105°	572.9	580.5	586.2	591.0	591.0
107.5°	694.7	706.1	706.1	708.0	694.7
110°	812.7	828.0	828.0	828.0	820.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	940.2	956.4	953.5	946.0	940.2
115°	1065.9	1081.1	1076.3	1073.5	1065.9
117.5°	1190.5	1211.5	1198.2	1190.5	1182.9
120°	1316.2	1337.0	1316.2	1316.2	1307.5
122.5°	1430.3	1457.0	1443.7	1436.0	1430.3
125°	1550.3	1574.0	1566.5	1557.8	1555.0
127.5°	1667.3	1696.8	1686.3	1674.9	1667.3
130°	1776.7	1811.0	1806.2	1800.5	1790.0
132.5°	1899.5	1926.1	1928.0	1914.7	1907.1
135°	2005.1	2034.6	2040.3	2037.5	2029.9
137.5°	2123.1	2146.9	2151.7	2149.8	2138.4
140°	2226.9	2250.6	2263.9	2263.9	2253.5
142.5°	2333.4	2357.2	2364.8	2367.7	2357.2
145°	2434.4	2453.3	2468.5	2471.4	2461.0
147.5°	2524.7	2548.5	2559.9	2564.7	2554.2
150°	2618.0	2634.2	2644.6	2653.2	2644.6
152.5°	2700.7	2716.9	2730.2	2740.8	2730.2
155°	2783.6	2791.1	2799.8	2813.1	2804.6
157.5°	2854.9	2860.7	2865.4	2884.4	2871.1
160°	2918.7	2924.4	2927.3	2943.4	2932.0
162.5°	2977.7	2977.7	2980.5	2998.6	2985.3
165°	3028.1	3025.2	3025.2	3044.3	3031.0
167.5°	3073.8	3065.3	3065.3	3084.2	3070.9
170°	3108.1	3100.4	3097.7	3116.6	3100.4
172.5°	3131.8	3124.3	3121.4	3140.5	3124.3
175°	3150.9	3143.2	3137.6	3156.7	3140.5
177.5°	3161.3	3153.8	3148.0	3164.2	3148.0
180°	3156.7	3156.7	3156.7	3156.7	3156.7

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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	9.98	10.81	10.97	11.81	13.13	9.55	10.38	10.54	11.38	12.70
	3H	11.64	12.38	12.64	13.39	14.73	11.17	11.91	12.16	12.92	14.26
	4H	12.23	12.93	13.23	13.94	15.29	11.75	12.46	12.76	13.47	14.82
	6H	12.62	13.27	13.64	14.29	15.65	12.15	12.80	13.17	13.81	15.17
	8H	12.73	13.35	13.75	14.38	15.74	12.25	12.87	13.28	13.90	15.26
	12H	12.77	13.36	13.81	14.39	15.77	12.29	12.88	13.32	13.91	15.29
4H	2H	10.44	11.15	11.46	12.16	13.50	10.09	10.80	11.11	11.81	13.16
	3H	12.30	12.89	13.33	13.93	15.29	11.91	12.50	12.93	13.54	14.90
	4H	13.02	13.56	14.05	14.59	15.97	12.61	13.15	13.64	14.18	15.57
	6H	13.53	13.99	14.57	15.05	16.43	13.12	13.58	14.16	14.64	16.02
	8H	13.68	14.11	14.72	15.16	16.55	13.27	13.70	14.31	14.75	16.14
	12H	13.75	14.14	14.81	15.20	16.60	13.33	13.72	14.39	14.78	16.18
8H	4H	13.21	13.64	14.25	14.69	16.09	12.85	13.28	13.89	14.33	15.73
	6H	13.84	14.20	14.91	15.29	16.68	13.48	13.84	14.54	14.92	16.32
	8H	14.06	14.38	15.13	15.45	16.86	13.69	14.01	14.77	15.08	16.49
	12H	14.19	14.47	15.27	15.54	16.99	13.81	14.08	14.88	15.15	16.61
12H	4H	13.19	13.59	14.26	14.65	16.05	12.84	13.23	13.90	14.30	15.70
	6H	13.87	14.19	14.94	15.26	16.67	13.52	13.83	14.59	14.91	16.32
	8H	14.11	14.39	15.19	15.46	16.91	13.75	14.03	14.83	15.10	16.55