

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: P918024

Luminaire Tested: DFN2DIP-TR3F0-030D090US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918024
REPORT IS A COMBINATION OF REPORTS P900355 AND P897195
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-030D090US930-FLLFLL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

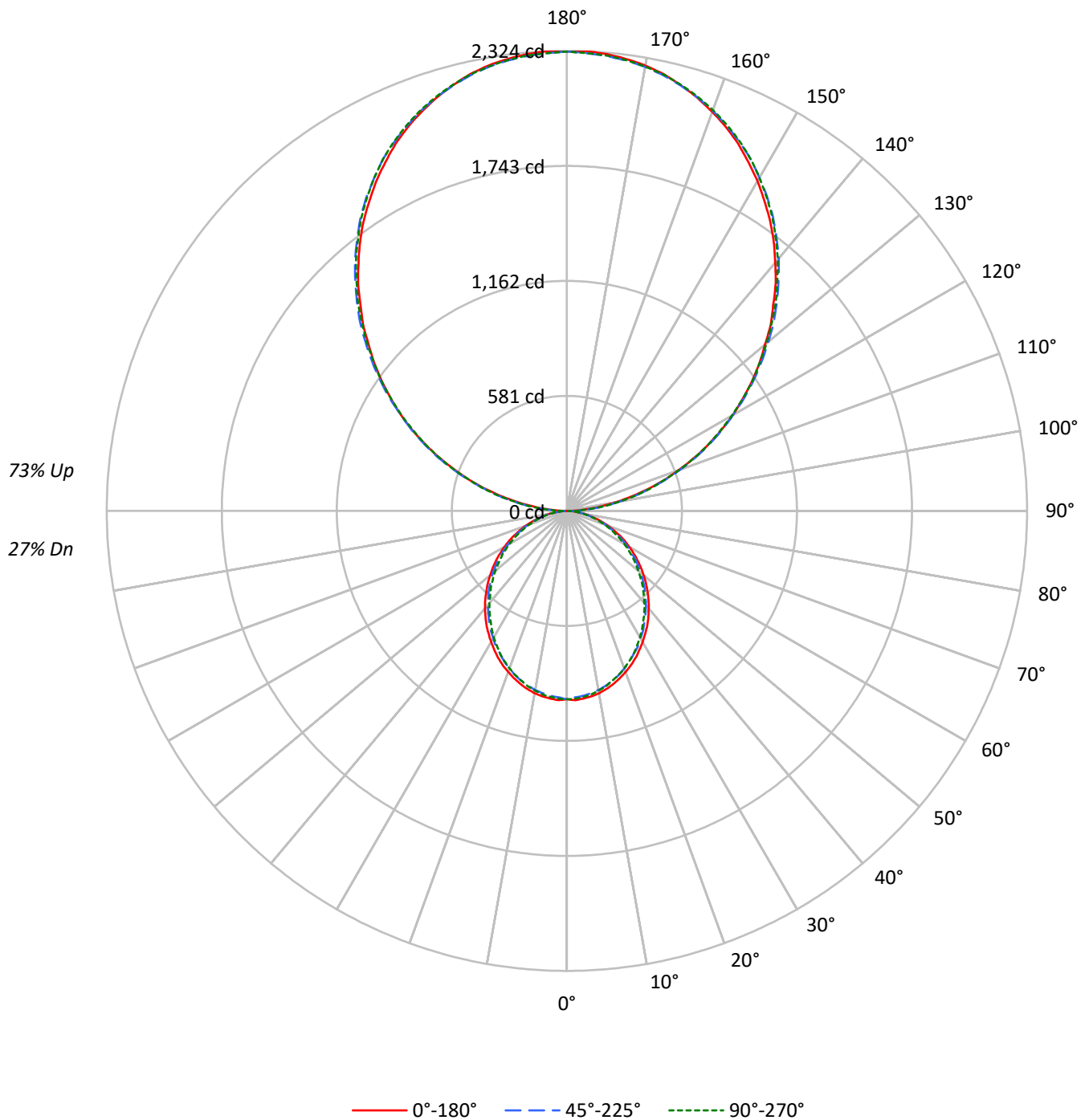
Lumens per Lamp: N/A
Luminaire Lumens: 8915.3 lumens
Efficiency: N/A
Efficacy: 93.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 94.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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	71	71	71	52	52	52	35	35	35
1	93	88	85	81	83	79	76	73	62	60	58	46	44	43	31	30	30
2	84	77	71	66	75	69	64	60	54	51	48	40	38	36	27	26	25
3	77	68	61	55	68	61	55	50	48	44	40	35	33	30	24	23	21
4	70	60	52	47	62	54	47	42	42	38	34	32	29	26	22	20	18
5	64	53	45	40	57	48	41	36	38	33	29	28	25	22	19	17	16
6	59	48	40	34	53	43	36	31	34	29	25	25	22	20	18	16	14
7	55	43	35	30	49	39	32	27	31	26	22	23	20	17	16	14	12
8	51	39	31	26	45	35	28	24	28	23	20	21	18	15	15	13	11
9	47	35	28	23	42	32	26	21	25	21	17	19	16	14	14	11	10
10	44	32	25	21	39	29	23	19	23	19	16	18	15	12	13	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1186	1186	1186
5°	1187	1168	1176
10°	1177	1152	1160
15°	1159	1132	1134
20°	1135	1104	1108
25°	1111	1072	1078
30°	1081	1042	1039
35°	1053	1006	999
40°	1018	970	961
45°	983	934	921
50°	945	896	876
55°	906	852	834
60°	860	800	785
65°	811	746	728
70°	748	680	667
75°	662	601	609
80°	557	500	500
85°	394	329	323

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2263 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	89.6	1.0
10°-20°	252.0	2.8
20°-30°	370.4	4.2
30°-40°	430.2	4.8
40°-50°	429.7	4.8
50°-60°	374.6	4.2
60°-70°	277.0	3.1
70°-80°	156.7	1.8
80°-90°	47.9	0.5
90°-100°	143.6	1.6
100°-110°	456.3	5.1
110°-120°	780.8	8.8
120°-130°	1026.9	11.5
130°-140°	1152.6	12.9
140°-150°	1130.3	12.7
150°-160°	948.2	10.6
160°-170°	628.8	7.1
170°-180°	219.8	2.5
0°-30°	712.0	8.0
0°-40°	1142.2	12.8
0°-60°	1946.5	21.8
0°-90°	2428.0	27.2
90°-120°	1380.7	15.5
90°-150°	4690.5	52.6
90°-180°	6487.0	72.8
0°-180°	8915.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	952	952	952	952	952	
5°	952	948	938	945	944	90
15°	906	901	889	892	888	255
25°	820	813	797	799	797	377
35°	707	698	684	678	674	442
45°	576	569	556	545	542	444
55°	436	430	419	408	404	390
65°	294	288	279	271	266	290
75°	154	152	147	142	144	164
85°	38	37	36	33	32	42
90°	2	25	69	64	66	9
95°	102	122	125	125	122	114
105°	421	427	431	434	434	444
115°	784	795	791	789	784	775
125°	1140	1157	1152	1145	1143	1018
135°	1474	1496	1500	1498	1492	1139
145°	1790	1804	1815	1817	1809	1118
155°	2046	2052	2058	2068	2062	942
165°	2226	2224	2224	2238	2228	628
175°	2316	2311	2307	2321	2309	220
180°	2321	2321	2321	2321	2321	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	951.7	951.7	951.7	951.7	951.7
2.5°	957.2	952.7	942.6	951.7	950.0
5°	951.7	948.1	938.0	945.3	943.5
7.5°	945.3	939.9	929.8	937.2	935.3
10°	935.3	928.9	917.9	925.2	922.5
12.5°	921.5	916.1	905.1	909.6	907.8
15°	906.0	900.6	888.6	892.3	887.7
17.5°	886.7	881.3	869.4	873.9	869.4
20°	865.7	860.2	847.4	850.1	846.5
22.5°	844.7	836.5	824.5	824.5	822.6
25°	819.9	812.7	797.1	798.9	797.1
27.5°	792.5	786.0	774.2	771.5	767.0
30°	765.1	757.7	744.0	741.3	737.6
32.5°	735.8	730.3	715.7	710.1	706.5
35°	707.4	698.3	683.6	678.1	673.5
37.5°	675.4	667.2	652.5	646.0	641.5
40°	642.5	635.1	620.4	612.3	608.6
42.5°	610.4	603.1	588.5	579.3	573.8
45°	575.7	569.2	555.5	545.4	541.8
47.5°	541.8	535.4	520.7	510.6	505.2
50°	506.1	501.5	488.7	475.9	471.3
52.5°	471.3	464.9	453.1	443.0	436.5
55°	435.7	430.2	419.1	408.2	403.7
57.5°	399.9	395.3	383.4	372.4	368.8
60°	364.2	360.6	347.8	337.7	335.0
62.5°	329.5	323.0	313.9	304.8	301.1
65°	293.8	288.3	279.2	270.9	266.4
67.5°	257.2	252.6	244.3	238.0	234.3
70°	223.3	219.6	211.4	205.0	201.4
72.5°	188.6	184.8	180.3	173.9	171.2
75°	153.7	152.0	147.3	141.9	143.7
77.5°	122.6	119.0	117.1	114.4	111.7
80°	91.6	90.6	88.7	86.0	84.2
82.5°	62.2	62.2	61.4	57.6	57.6
85°	37.5	36.6	35.7	32.9	32.0
87.5°	16.5	14.7	12.8	10.1	9.1
90°	2.1	25.2	68.6	64.3	66.4
92.5°	43.4	58.8	60.9	62.9	62.9
95°	102.2	121.7	125.2	125.2	121.7
97.5°	170.0	188.2	195.9	195.9	195.9
100°	248.3	264.5	270.0	270.0	268.0
102.5°	330.9	342.8	350.5	352.6	350.5
105°	421.2	426.7	431.0	434.5	434.5
107.5°	510.7	519.1	519.1	520.5	510.7
110°	597.5	608.7	608.7	608.7	603.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	691.2	703.1	701.0	695.4	691.2
115°	783.6	794.8	791.2	789.2	783.6
117.5°	875.2	890.6	880.8	875.2	869.6
120°	967.6	982.9	967.6	967.6	961.2
122.5°	1051.5	1071.1	1061.4	1055.7	1051.5
125°	1139.7	1157.2	1151.6	1145.2	1143.2
127.5°	1225.7	1247.4	1239.7	1231.3	1225.7
130°	1306.2	1331.4	1327.9	1323.6	1316.0
132.5°	1396.4	1416.0	1417.4	1407.6	1402.1
135°	1474.1	1495.7	1500.0	1497.9	1492.3
137.5°	1560.8	1578.3	1581.8	1580.5	1572.1
140°	1637.1	1654.6	1664.3	1664.3	1656.7
142.5°	1715.5	1732.9	1738.5	1740.7	1732.9
145°	1789.7	1803.6	1814.8	1816.9	1809.2
147.5°	1856.1	1873.6	1882.0	1885.5	1877.8
150°	1924.7	1936.6	1944.2	1950.5	1944.2
152.5°	1985.5	1997.4	2007.2	2014.9	2007.2
155°	2046.4	2051.9	2058.3	2068.1	2061.8
157.5°	2098.8	2103.1	2106.6	2120.5	2110.7
160°	2145.7	2149.9	2152.1	2163.9	2155.5
162.5°	2189.1	2189.1	2191.2	2204.5	2194.7
165°	2226.2	2224.1	2224.1	2238.1	2228.3
167.5°	2259.8	2253.5	2253.5	2267.4	2257.6
170°	2285.0	2279.3	2277.3	2291.2	2279.3
172.5°	2302.4	2296.9	2294.7	2308.8	2296.9
175°	2316.4	2310.8	2306.6	2320.7	2308.8
177.5°	2324.1	2318.5	2314.3	2326.2	2314.3
180°	2320.7	2320.7	2320.7	2320.7	2320.7

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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	5.20	5.89	6.33	7.01	8.58	4.77	5.46	5.90	6.58	8.15
	3H	6.84	7.46	7.98	8.59	10.17	6.37	6.99	7.51	8.12	9.70
	4H	7.41	8.00	8.56	9.13	10.71	6.95	7.53	8.09	8.66	10.25
	6H	7.80	8.34	8.95	9.47	11.06	7.33	7.87	8.48	9.00	10.60
	8H	7.89	8.40	9.05	9.55	11.14	7.42	7.94	8.58	9.09	10.67
	12H	7.93	8.42	9.09	9.56	11.17	7.46	7.94	8.62	9.09	10.70
4H	2H	5.64	6.22	6.79	7.36	8.94	5.30	5.88	6.45	7.01	8.60
	3H	7.48	7.97	8.64	9.12	10.72	7.09	7.58	8.25	8.73	10.33
	4H	8.18	8.63	9.34	9.77	11.39	7.78	8.23	8.94	9.37	10.99
	6H	8.67	9.06	9.84	10.23	11.83	8.27	8.66	9.44	9.82	11.43
	8H	8.81	9.17	9.98	10.33	11.96	8.41	8.77	9.58	9.93	11.55
	12H	8.87	9.20	10.06	10.37	12.00	8.46	8.79	9.64	9.96	11.58
8H	4H	8.36	8.72	9.52	9.88	11.50	8.00	8.36	9.17	9.52	11.14
	6H	8.97	9.27	10.16	10.47	12.09	8.61	8.91	9.80	10.11	11.73
	8H	9.18	9.44	10.37	10.62	12.26	8.82	9.08	10.01	10.26	11.90
	12H	9.30	9.53	10.50	10.70	12.38	8.92	9.15	10.12	10.32	12.00
12H	4H	8.33	8.66	9.52	9.83	11.46	7.98	8.31	9.17	9.48	11.11
	6H	9.00	9.25	10.19	10.43	12.07	8.65	8.91	9.84	10.09	11.73
	8H	9.22	9.45	10.42	10.63	12.30	8.87	9.10	10.07	10.27	11.95