

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: P915598

Luminaire Tested: DFN2DIP-TR4F0-080D040US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915598
REPORT IS A COMBINATION OF REPORTS P900377 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-080D040US927-FLLFLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

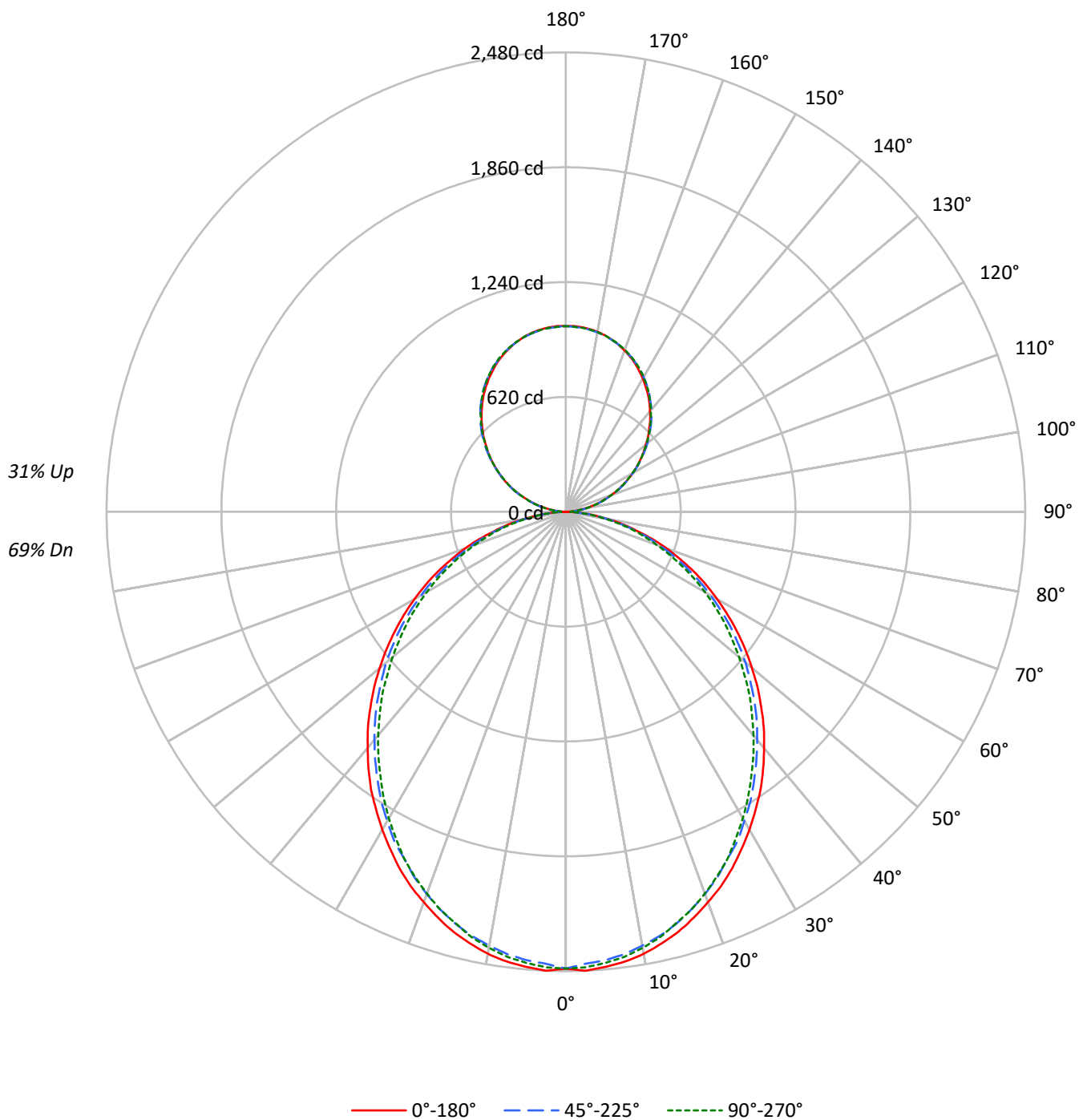
Lumens per Lamp: N/A
Luminaire Lumens: 9078.4 lumens
Efficiency: N/A
Efficacy: 86.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 105.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
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	112	112	112	112	106	106	106	106	94	94	94	83	83	83	74	74	74
1	102	98	94	90	96	92	89	86	83	80	77	74	71	70	65	64	62
2	93	85	79	74	88	81	75	70	72	68	64	65	61	58	57	55	52
3	85	75	67	61	80	71	64	59	64	58	54	57	53	49	51	48	45
4	78	67	58	52	73	63	56	50	57	51	46	51	46	42	46	42	39
5	71	59	51	45	67	56	49	43	51	45	40	46	41	37	41	37	34
6	66	53	45	39	62	51	43	38	46	40	35	41	36	32	37	33	30
7	61	48	40	34	58	46	39	33	42	36	31	38	33	29	34	30	26
8	57	44	36	31	54	42	35	30	38	32	28	35	29	26	31	27	24
9	53	40	33	27	50	39	31	26	35	29	25	32	27	23	29	25	21
10	50	37	30	25	47	36	29	24	32	27	22	30	25	21	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1959	1959	1959
5°	1962	1932	1945
10°	1946	1906	1918
15°	1918	1874	1877
20°	1879	1831	1835
25°	1841	1779	1786
30°	1792	1730	1724
35°	1747	1673	1659
40°	1691	1615	1596
45°	1634	1557	1532
50°	1573	1496	1458
55°	1509	1426	1391
60°	1436	1342	1313
65°	1357	1256	1221
70°	1257	1150	1122
75°	1117	1024	1030
80°	949	864	856
85°	687	586	567

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1634 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	232.1	2.6
10°-20°	653.0	7.2
20°-30°	959.7	10.6
30°-40°	1114.6	12.3
40°-50°	1113.2	12.3
50°-60°	970.7	10.7
60°-70°	717.6	7.9
70°-80°	406.0	4.5
80°-90°	110.0	1.2
90°-100°	62.0	0.7
100°-110°	197.0	2.2
110°-120°	337.2	3.7
120°-130°	443.5	4.9
130°-140°	497.8	5.5
140°-150°	488.1	5.4
150°-160°	409.5	4.5
160°-170°	271.5	3.0
170°-180°	94.9	1.0
0°-30°	1844.8	20.3
0°-40°	2959.4	32.6
0°-60°	5043.4	55.6
0°-90°	6276.9	69.1
90°-120°	596.2	6.6
90°-150°	2025.6	22.3
90°-180°	2801.0	30.9
0°-180°	9078.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2466	2466	2466	2466	2466	
5°	2466	2457	2430	2449	2445	234
15°	2348	2333	2302	2312	2300	661
25°	2125	2106	2066	2070	2066	978
35°	1833	1809	1771	1757	1745	1145
45°	1492	1475	1439	1413	1404	1151
55°	1129	1114	1086	1058	1046	1009
65°	761	747	723	702	690	753
75°	398	394	382	368	372	425
85°	97	95	93	85	83	108
90°	1	11	30	28	29	9
95°	44	53	54	54	53	49
105°	182	184	186	188	188	192
115°	338	343	342	341	338	335
125°	492	500	497	495	494	440
135°	637	646	648	647	644	492
145°	773	779	784	785	781	483
155°	884	886	889	893	890	407
165°	961	960	960	966	962	271
175°	1000	998	996	1002	997	95
180°	1002	1002	1002	1002	1002	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2465.9	2465.9	2465.9	2465.9	2465.9
2.5°	2480.2	2468.4	2442.3	2465.9	2461.4
5°	2465.9	2456.6	2430.5	2449.3	2444.8
7.5°	2449.3	2435.2	2409.1	2428.2	2423.4
10°	2423.4	2406.8	2378.4	2397.2	2390.2
12.5°	2387.7	2373.6	2345.2	2357.0	2352.2
15°	2347.5	2333.4	2302.4	2312.0	2300.2
17.5°	2297.6	2283.5	2252.6	2264.4	2252.6
20°	2243.1	2229.0	2195.8	2202.8	2193.5
22.5°	2188.7	2167.3	2136.4	2136.4	2131.6
25°	2124.6	2105.7	2065.5	2070.0	2065.5
27.5°	2053.3	2036.8	2006.0	1999.0	1987.2
30°	1982.4	1963.3	1927.9	1920.8	1911.2
32.5°	1906.5	1892.4	1854.3	1840.0	1830.5
35°	1832.9	1809.3	1771.3	1757.0	1745.2
37.5°	1749.9	1728.5	1690.6	1674.0	1662.2
40°	1664.7	1645.5	1607.6	1586.4	1576.8
42.5°	1581.7	1562.5	1524.8	1500.9	1486.8
45°	1491.6	1475.0	1439.2	1413.3	1403.8
47.5°	1403.8	1387.2	1349.2	1323.0	1308.9
50°	1311.2	1299.4	1266.1	1233.0	1221.1
52.5°	1221.1	1204.5	1173.9	1147.7	1131.1
55°	1128.8	1114.4	1086.1	1057.6	1045.8
57.5°	1036.3	1024.4	993.5	965.0	955.4
60°	943.6	934.4	901.1	875.0	867.9
62.5°	853.6	837.0	813.3	789.7	780.1
65°	761.3	746.9	723.3	701.9	690.1
67.5°	666.4	654.3	633.2	616.6	607.0
70°	578.6	569.0	547.7	531.1	521.7
72.5°	488.5	479.0	467.1	450.6	443.5
75°	398.2	393.7	381.7	367.6	372.3
77.5°	317.7	308.2	303.4	296.4	289.3
80°	237.3	234.7	230.0	222.9	218.1
82.5°	161.3	161.3	159.0	149.4	149.4
85°	97.1	94.8	92.6	85.3	83.0
87.5°	42.8	38.0	33.2	26.1	23.7
90°	0.9	10.9	29.6	27.8	28.7
92.5°	18.7	25.3	26.3	27.2	27.2
95°	44.1	52.6	54.1	54.1	52.6
97.5°	73.4	81.3	84.6	84.6	84.6
100°	107.3	114.2	116.6	116.6	115.7
102.5°	142.9	148.1	151.4	152.3	151.4
105°	181.9	184.3	186.1	187.6	187.6
107.5°	220.5	224.2	224.2	224.7	220.5
110°	258.0	262.8	262.8	262.8	260.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	298.5	303.6	302.7	300.3	298.5
115°	338.3	343.3	341.7	340.8	338.3
117.5°	377.9	384.6	380.4	377.9	375.6
120°	417.9	424.5	417.9	417.9	415.1
122.5°	454.1	462.6	458.4	455.9	454.1
125°	492.2	499.7	497.3	494.6	493.7
127.5°	529.3	538.7	535.4	531.7	529.3
130°	564.0	575.0	573.5	571.6	568.3
132.5°	603.0	611.5	612.1	607.8	605.5
135°	636.6	645.9	647.8	646.8	644.4
137.5°	674.1	681.6	683.1	682.5	678.9
140°	706.9	714.5	718.7	718.7	715.4
142.5°	740.8	748.4	750.8	751.7	748.4
145°	772.9	778.9	783.7	784.7	781.3
147.5°	801.5	809.1	812.7	814.2	810.9
150°	831.2	836.3	839.6	842.3	839.6
152.5°	857.5	862.5	866.8	870.1	866.8
155°	883.7	886.1	888.8	893.1	890.3
157.5°	906.4	908.2	909.7	915.8	911.5
160°	926.6	928.4	929.3	934.5	930.8
162.5°	945.3	945.3	946.3	952.0	947.8
165°	961.4	960.4	960.4	966.5	962.3
167.5°	975.9	973.1	973.1	979.2	974.9
170°	986.7	984.3	983.4	989.4	984.3
172.5°	994.3	991.9	990.9	997.0	991.9
175°	1000.4	997.9	996.1	1002.1	997.0
177.5°	1003.7	1001.2	999.4	1004.6	999.4
180°	1002.1	1002.1	1002.1	1002.1	1002.1

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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	11.21	12.27	11.98	13.07	14.03	10.77	11.84	11.55	12.63	13.60
	3H	12.88	13.84	13.67	14.64	15.64	12.41	13.36	13.19	14.17	15.17
	4H	13.48	14.38	14.28	15.19	16.20	13.00	13.91	13.81	14.72	15.73
	6H	13.89	14.72	14.70	15.54	16.57	13.41	14.25	14.23	15.07	16.09
	8H	14.00	14.79	14.82	15.63	16.66	13.52	14.32	14.35	15.16	16.18
	12H	14.05	14.81	14.88	15.64	16.70	13.57	14.33	14.40	15.16	16.21
4H	2H	11.69	12.59	12.50	13.41	14.42	11.35	12.25	12.15	13.06	14.07
	3H	13.58	14.33	14.40	15.18	16.20	13.18	13.94	14.00	14.78	15.81
	4H	14.30	14.98	15.13	15.83	16.88	13.89	14.58	14.73	15.43	16.48
	6H	14.82	15.42	15.67	16.29	17.35	14.42	15.01	15.27	15.88	16.94
	8H	14.98	15.53	15.83	16.40	17.47	14.57	15.12	15.42	15.99	17.06
	12H	15.06	15.56	15.94	16.45	17.52	14.64	15.14	15.51	16.03	17.10
8H	4H	14.51	15.07	15.36	15.93	17.00	14.15	14.71	15.00	15.57	16.64
	6H	15.15	15.61	16.03	16.52	17.59	14.79	15.25	15.67	16.16	17.23
	8H	15.37	15.78	16.27	16.68	17.77	15.00	15.41	15.90	16.31	17.40
	12H	15.51	15.87	16.41	16.77	17.91	15.13	15.49	16.02	16.38	17.52
12H	4H	14.51	15.01	15.38	15.89	16.97	14.15	14.65	15.03	15.54	16.62
	6H	15.18	15.59	16.07	16.49	17.58	14.83	15.24	15.72	16.14	17.23
	8H	15.43	15.79	16.33	16.69	17.83	15.08	15.44	15.97	16.33	17.47