

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: P915686

Luminaire Tested: DFN2DIP-TR4F0-100D080US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915686
REPORT IS A COMBINATION OF REPORTS P900453 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-100D080US927-FLLFLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

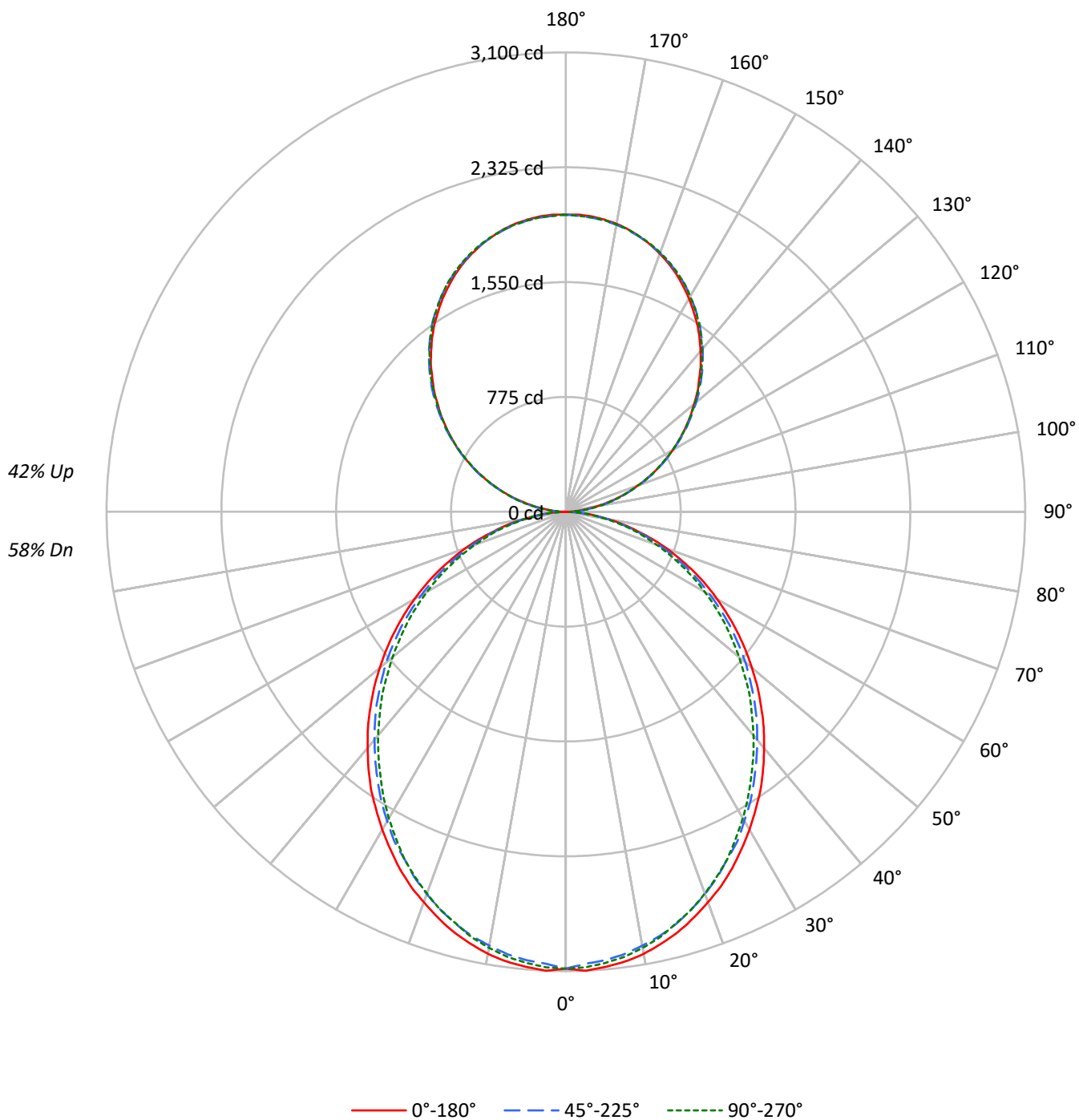
Lumens per Lamp: N/A
Luminaire Lumens: 13451.2 lumens
Efficiency: N/A
Efficacy: 84.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 160.2
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		75	75	75		64	64	64
1	100	95	91	88		93	89	86	82		77	75	72		66	65	63		56	55	54
2	91	83	77	72		84	78	72	68		68	64	60		58	55	52		50	47	45
3	83	73	66	60		77	69	62	57		60	55	50		52	48	44		44	41	39
4	76	65	57	51		70	61	54	48		53	47	43		46	42	38		39	36	33
5	70	58	50	43		65	54	47	41		48	42	37		41	37	33		35	32	29
6	64	52	44	38		60	49	41	36		43	37	32		37	33	29		32	29	26
7	59	47	39	33		55	44	37	32		39	33	29		34	29	26		29	26	23
8	55	43	35	29		51	40	33	28		36	30	26		31	26	23		27	23	20
9	51	39	31	26		48	37	30	25		33	27	23		29	24	21		25	21	18
10	48	36	28	24		45	34	27	23		30	25	21		27	22	19		23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2449	2449	2449
5°	2453	2415	2431
10°	2433	2382	2398
15°	2397	2343	2346
20°	2349	2288	2294
25°	2301	2223	2233
30°	2240	2162	2155
35°	2183	2091	2073
40°	2113	2019	1995
45°	2043	1946	1916
50°	1966	1870	1823
55°	1886	1782	1738
60°	1796	1678	1641
65°	1697	1570	1526
70°	1571	1438	1402
75°	1396	1280	1288
80°	1186	1079	1070
85°	858	732	709

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2043 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	290.1	2.2
10°-20°	816.3	6.1
20°-30°	1199.6	8.9
30°-40°	1393.3	10.4
40°-50°	1391.5	10.3
50°-60°	1213.4	9.0
60°-70°	897.0	6.7
70°-80°	507.5	3.8
80°-90°	139.6	1.0
90°-100°	124.0	0.9
100°-110°	394.1	2.9
110°-120°	674.4	5.0
120°-130°	886.9	6.6
130°-140°	995.5	7.4
140°-150°	976.2	7.3
150°-160°	818.9	6.1
160°-170°	543.1	4.0
170°-180°	189.8	1.4
0°-30°	2306.0	17.1
0°-40°	3699.3	27.5
0°-60°	6304.2	46.9
0°-90°	7848.3	58.3
90°-120°	1192.5	8.9
90°-150°	4051.1	30.1
90°-180°	5603.0	41.7
0°-180°	13451.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3082	3082	3082	3082	3082	
5°	3082	3071	3038	3062	3056	293
15°	2934	2917	2878	2890	2875	826
25°	2656	2632	2582	2587	2582	1222
35°	2291	2262	2214	2196	2181	1431
45°	1864	1844	1799	1767	1755	1439
55°	1411	1393	1358	1322	1307	1262
65°	952	934	904	877	863	941
75°	498	492	477	460	465	531
85°	121	119	116	107	104	135
90°	2	22	59	56	57	13
95°	88	105	108	108	105	98
105°	364	369	372	375	375	384
115°	677	686	683	682	677	669
125°	984	999	995	989	987	880
135°	1273	1292	1296	1294	1289	984
145°	1546	1558	1567	1569	1563	966
155°	1767	1772	1778	1786	1781	813
165°	1923	1921	1921	1933	1924	542
175°	2001	1996	1992	2004	1994	190
180°	2004	2004	2004	2004	2004	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3082.5	3082.5	3082.5	3082.5	3082.5
2.5°	3100.4	3085.5	3052.8	3082.5	3076.8
5°	3082.5	3070.8	3038.1	3061.7	3056.0
7.5°	3061.7	3044.0	3011.3	3035.2	3029.3
10°	3029.3	3008.5	2973.0	2996.6	2987.8
12.5°	2984.6	2967.0	2931.5	2946.3	2940.3
15°	2934.3	2916.7	2878.0	2890.0	2875.2
17.5°	2872.1	2854.5	2815.7	2830.5	2815.7
20°	2803.8	2786.2	2744.7	2753.5	2741.8
22.5°	2735.9	2709.2	2670.4	2670.4	2664.5
25°	2655.7	2632.1	2581.8	2587.4	2581.8
27.5°	2566.7	2545.9	2507.6	2498.8	2484.0
30°	2478.0	2454.1	2409.7	2400.9	2389.0
32.5°	2383.0	2365.5	2317.9	2300.0	2288.1
35°	2291.2	2261.7	2214.1	2196.2	2181.4
37.5°	2187.4	2160.7	2113.2	2092.5	2077.7
40°	2080.8	2056.9	2009.4	1983.1	1971.1
42.5°	1977.0	1953.1	1906.0	1876.1	1858.5
45°	1864.5	1843.7	1799.0	1766.6	1754.8
47.5°	1754.8	1734.0	1686.5	1653.8	1636.2
50°	1639.0	1624.2	1582.7	1541.2	1526.5
52.5°	1526.5	1505.7	1467.3	1434.6	1413.9
55°	1411.0	1393.1	1357.6	1322.0	1307.3
57.5°	1295.3	1280.5	1241.8	1206.3	1194.4
60°	1179.6	1167.9	1126.4	1093.7	1084.9
62.5°	1067.0	1046.2	1016.7	987.1	975.2
65°	951.6	933.7	904.1	877.3	862.6
67.5°	833.1	817.9	791.5	770.8	758.8
70°	723.3	711.3	684.6	663.8	652.2
72.5°	610.7	598.7	584.0	563.2	554.4
75°	497.8	492.2	477.1	459.5	465.4
77.5°	397.2	385.2	379.2	370.4	361.6
80°	296.5	293.4	287.4	278.6	272.7
82.5°	201.6	201.6	198.8	186.8	186.8
85°	121.4	118.6	115.7	106.6	103.8
87.5°	53.5	47.5	41.5	32.7	29.5
90°	1.8	21.8	59.3	55.6	57.4
92.5°	37.5	50.8	52.6	54.3	54.3
95°	88.2	105.1	108.1	108.1	105.1
97.5°	146.9	162.6	169.2	169.2	169.2
100°	214.5	228.4	233.2	233.2	231.4
102.5°	285.8	296.1	302.7	304.5	302.7
105°	363.8	368.6	372.2	375.3	375.3
107.5°	441.1	448.4	448.4	449.6	441.1
110°	516.0	525.7	525.7	525.7	520.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	597.0	607.3	605.5	600.6	597.0
115°	676.8	686.4	683.4	681.6	676.8
117.5°	755.9	769.2	760.7	755.9	751.1
120°	835.7	849.0	835.7	835.7	830.2
122.5°	908.2	925.1	916.6	911.8	908.2
125°	984.3	999.4	994.6	989.1	987.4
127.5°	1058.7	1077.4	1070.7	1063.5	1058.7
130°	1128.1	1149.9	1146.8	1143.3	1136.6
132.5°	1206.1	1223.0	1224.2	1215.8	1210.9
135°	1273.1	1291.9	1295.5	1293.7	1288.9
137.5°	1348.1	1363.2	1366.2	1365.0	1357.7
140°	1414.0	1429.0	1437.5	1437.5	1430.8
142.5°	1481.6	1496.7	1501.6	1503.4	1496.7
145°	1545.7	1557.7	1567.4	1569.2	1562.6
147.5°	1603.1	1618.2	1625.4	1628.5	1621.8
150°	1662.3	1672.5	1679.2	1684.7	1679.2
152.5°	1714.8	1725.1	1733.6	1740.3	1733.6
155°	1767.4	1772.3	1777.7	1786.1	1780.7
157.5°	1812.7	1816.4	1819.4	1831.4	1823.0
160°	1853.2	1856.9	1858.7	1868.9	1861.7
162.5°	1890.7	1890.7	1892.5	1904.0	1895.5
165°	1922.7	1920.9	1920.9	1933.0	1924.5
167.5°	1951.7	1946.3	1946.3	1958.4	1949.9
170°	1973.5	1968.6	1966.8	1978.9	1968.6
172.5°	1988.6	1983.8	1982.0	1994.0	1983.8
175°	2000.7	1995.8	1992.2	2004.3	1994.0
177.5°	2007.3	2002.5	1998.8	2009.1	1998.8
180°	2004.3	2004.3	2004.3	2004.3	2004.3

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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	11.11	12.06	12.00	12.96	14.11	10.68	11.62	11.56	12.53	13.67
	3H	12.78	13.63	13.67	14.54	15.71	12.31	13.15	13.20	14.06	15.24
	4H	13.37	14.17	14.28	15.09	16.27	12.90	13.70	13.81	14.61	15.80
	6H	13.77	14.51	14.70	15.44	16.63	13.30	14.04	14.22	14.96	16.16
	8H	13.88	14.58	14.81	15.53	16.72	13.41	14.11	14.34	15.05	16.24
	12H	13.93	14.60	14.87	15.54	16.76	13.45	14.12	14.39	15.06	16.28
4H	2H	11.59	12.38	12.50	13.30	14.48	11.24	12.04	12.16	12.96	14.14
	3H	13.46	14.13	14.38	15.07	16.27	13.07	13.73	13.99	14.68	15.88
	4H	14.18	14.78	15.11	15.73	16.95	13.77	14.38	14.71	15.32	16.54
	6H	14.70	15.22	15.64	16.19	17.41	14.29	14.81	15.24	15.78	17.00
	8H	14.85	15.34	15.80	16.30	17.54	14.44	14.93	15.39	15.89	17.12
	12H	14.92	15.37	15.89	16.35	17.59	14.50	14.95	15.47	15.92	17.17
8H	4H	14.38	14.87	15.33	15.83	17.07	14.02	14.51	14.97	15.47	16.71
	6H	15.01	15.42	15.99	16.42	17.66	14.65	15.06	15.63	16.06	17.29
	8H	15.24	15.59	16.22	16.59	17.84	14.87	15.23	15.85	16.22	17.47
	12H	15.37	15.69	16.36	16.67	17.97	14.99	15.30	15.98	16.29	17.59
12H	4H	14.37	14.81	15.34	15.79	17.03	14.02	14.46	14.99	15.44	16.68
	6H	15.04	15.40	16.03	16.40	17.65	14.69	15.05	15.68	16.04	17.30
	8H	15.29	15.61	16.28	16.59	17.89	14.93	15.25	15.92	16.23	17.53