

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: P915642

Luminaire Tested: DFN2DIP-TR4F0-090D060US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915642
REPORT IS A COMBINATION OF REPORTS P900415 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-090D060US927-FLLFLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

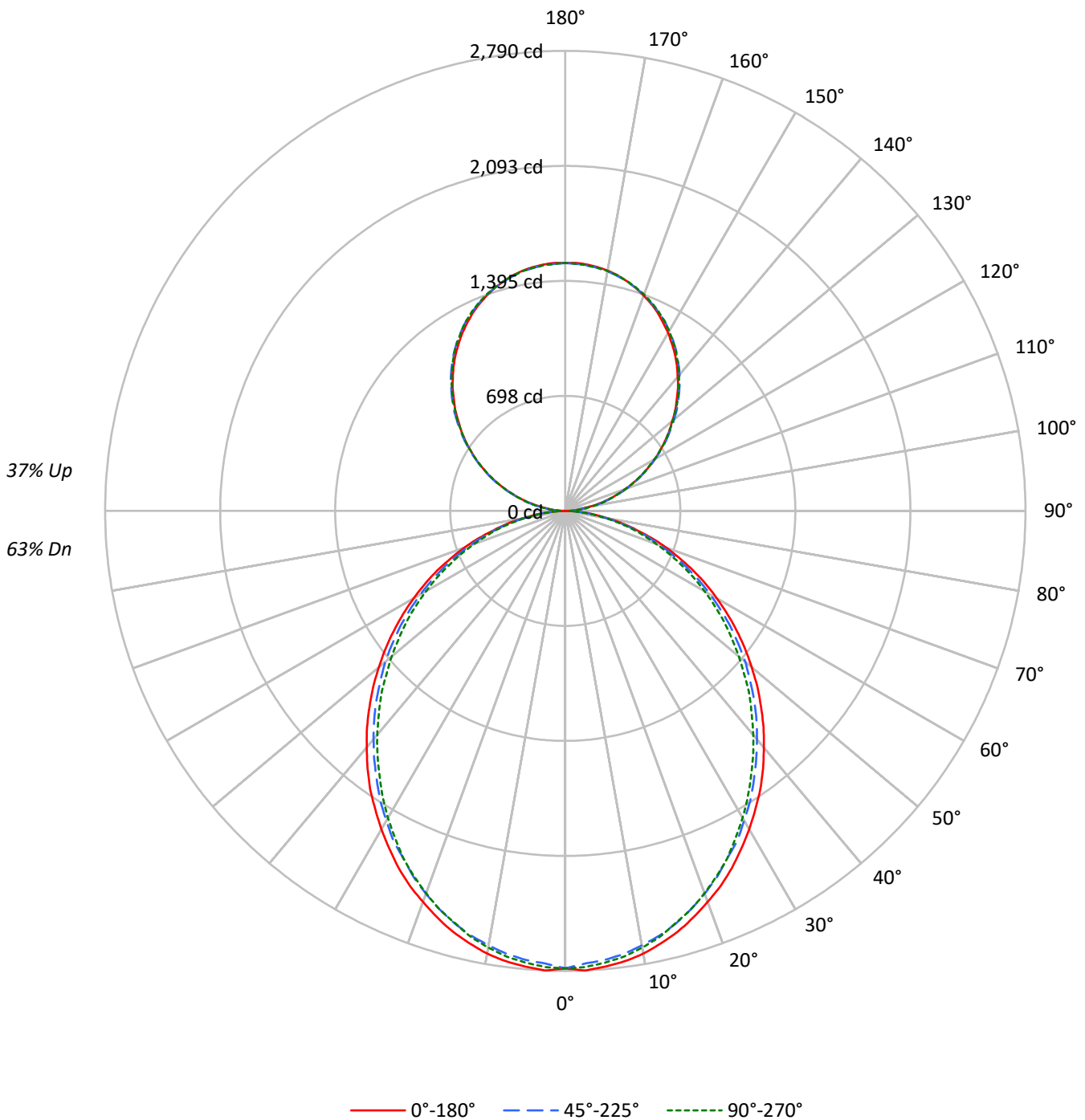
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11264.8 lumens
Efficiency: N/A
Efficacy: 85.2 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): 132.2
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

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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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	110	110	110	110	103	103	103	103	90	90	90	79	79	79	68	68	68	68	68	68	63
1	101	96	92	89	94	90	87	84	79	77	74	69	67	66	60	59	57	60	59	57	53
2	92	84	78	72	86	79	73	69	70	65	62	61	58	55	53	50	48	53	50	48	44
3	84	74	66	60	78	70	63	58	61	56	52	54	50	46	47	44	41	47	44	41	37
4	77	66	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35	42	38	35	32
5	70	58	50	44	66	55	48	42	49	43	38	43	38	35	38	34	31	38	34	31	28
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27	34	30	27	25
7	60	48	39	34	56	45	38	32	40	34	30	36	31	27	31	27	24	31	27	24	22
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22	29	25	22	20
9	52	40	32	27	49	38	30	26	34	28	24	30	25	22	27	23	20	27	23	20	18
10	49	36	29	24	46	35	28	23	31	25	21	28	23	20	25	21	18	25	21	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2204	2204	2204
5°	2207	2173	2188
10°	2190	2144	2158
15°	2157	2109	2112
20°	2114	2059	2064
25°	2071	2001	2009
30°	2016	1946	1940
35°	1965	1882	1866
40°	1902	1817	1796
45°	1839	1752	1724
50°	1770	1683	1641
55°	1698	1604	1564
60°	1616	1510	1477
65°	1527	1413	1373
70°	1414	1294	1262
75°	1257	1152	1159
80°	1068	971	963
85°	772	659	638

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1839 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	261.1	2.3
10°-20°	734.7	6.5
20°-30°	1079.6	9.6
30°-40°	1253.9	11.1
40°-50°	1252.4	11.1
50°-60°	1092.1	9.7
60°-70°	807.3	7.2
70°-80°	456.7	4.1
80°-90°	124.8	1.1
90°-100°	93.0	0.8
100°-110°	295.6	2.6
110°-120°	505.8	4.5
120°-130°	665.2	5.9
130°-140°	746.6	6.6
140°-150°	732.2	6.5
150°-160°	614.2	5.5
160°-170°	407.3	3.6
170°-180°	142.4	1.3
0°-30°	2075.4	18.4
0°-40°	3329.4	29.6
0°-60°	5673.8	50.4
0°-90°	7062.6	62.7
90°-120°	894.4	7.9
90°-150°	3038.4	27.0
90°-180°	4202.0	37.3
0°-180°	11264.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2774	2774	2774	2774	2774	
5°	2774	2764	2734	2756	2750	263
15°	2641	2625	2590	2601	2588	744
25°	2390	2369	2324	2329	2324	1100
35°	2062	2036	1993	1977	1963	1288
45°	1678	1659	1619	1590	1579	1295
55°	1270	1254	1222	1190	1176	1135
65°	856	840	814	790	776	847
75°	448	443	429	414	419	478
85°	109	107	104	96	93	122
90°	1	16	44	42	43	11
95°	66	79	81	81	79	74
105°	273	276	279	282	282	288
115°	508	515	512	511	508	502
125°	738	750	746	742	740	660
135°	955	969	972	970	967	738
145°	1159	1168	1176	1177	1172	724
155°	1326	1329	1333	1340	1336	610
165°	1442	1441	1441	1450	1443	407
175°	1500	1497	1494	1503	1496	143
180°	1503	1503	1503	1503	1503	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2774.1	2774.1	2774.1	2774.1	2774.1
2.5°	2790.3	2777.0	2747.6	2774.1	2769.1
5°	2774.1	2763.7	2734.3	2755.5	2750.4
7.5°	2755.5	2739.7	2710.2	2731.8	2726.4
10°	2726.4	2707.7	2675.7	2696.9	2689.0
12.5°	2686.1	2670.3	2638.4	2651.6	2646.3
15°	2640.9	2625.1	2590.2	2601.0	2587.7
17.5°	2584.8	2569.0	2534.2	2547.5	2534.2
20°	2523.4	2507.6	2470.2	2478.1	2467.6
22.5°	2462.3	2438.3	2403.4	2403.4	2398.0
25°	2390.1	2368.9	2323.6	2328.7	2323.6
27.5°	2310.0	2291.3	2256.8	2248.9	2235.6
30°	2230.2	2208.7	2168.8	2160.8	2150.1
32.5°	2144.8	2128.9	2086.1	2070.0	2059.3
35°	2062.1	2035.5	1992.7	1976.7	1963.3
37.5°	1968.7	1944.6	1901.9	1883.3	1869.9
40°	1872.7	1851.2	1808.5	1784.7	1774.0
42.5°	1779.3	1757.8	1715.4	1688.5	1672.7
45°	1678.0	1659.4	1619.1	1590.0	1579.3
47.5°	1579.3	1560.6	1517.8	1488.4	1472.6
50°	1475.1	1461.8	1424.4	1387.1	1373.8
52.5°	1373.8	1355.1	1320.6	1291.2	1272.5
55°	1269.9	1253.8	1221.8	1189.9	1176.5
57.5°	1165.8	1152.5	1117.7	1085.7	1074.9
60°	1061.6	1051.1	1013.8	984.4	976.4
62.5°	960.3	941.6	915.0	888.4	877.7
65°	856.4	840.3	813.6	789.6	776.3
67.5°	749.7	736.2	712.3	693.7	682.9
70°	650.9	640.2	616.2	597.5	587.0
72.5°	549.6	538.8	525.5	506.9	499.0
75°	448.1	442.9	429.4	413.5	418.9
77.5°	357.4	346.7	341.4	333.4	325.5
80°	266.9	264.0	258.6	250.7	245.4
82.5°	181.4	181.4	178.9	168.1	168.1
85°	109.2	106.7	104.2	95.9	93.4
87.5°	48.1	42.7	37.4	29.5	26.6
90°	1.3	16.3	44.4	41.7	43.0
92.5°	28.1	38.1	39.5	40.8	40.8
95°	66.1	78.8	81.1	81.1	78.8
97.5°	110.1	121.9	126.9	126.9	126.9
100°	160.9	171.3	174.9	174.9	173.6
102.5°	214.4	222.0	227.0	228.4	227.0
105°	272.8	276.5	279.2	281.5	281.5
107.5°	330.8	336.3	336.3	337.2	330.8
110°	387.1	394.3	394.3	394.3	390.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	447.7	455.4	454.1	450.4	447.7
115°	507.6	514.8	512.5	511.2	507.6
117.5°	567.0	576.9	570.5	567.0	563.3
120°	626.8	636.8	626.8	626.8	622.7
122.5°	681.1	693.8	687.5	683.9	681.1
125°	738.2	749.6	745.9	741.9	740.5
127.5°	794.0	808.0	803.0	797.6	794.0
130°	846.1	862.4	860.2	857.5	852.5
132.5°	904.6	917.3	918.1	911.8	908.2
135°	954.9	968.9	971.6	970.3	966.6
137.5°	1011.1	1022.4	1024.7	1023.7	1018.3
140°	1060.5	1071.8	1078.2	1078.2	1073.2
142.5°	1111.2	1122.5	1126.2	1127.5	1122.5
145°	1159.3	1168.3	1175.6	1176.9	1172.0
147.5°	1202.3	1213.6	1219.1	1221.3	1216.3
150°	1246.7	1254.4	1259.4	1263.4	1259.4
152.5°	1286.1	1293.9	1300.2	1305.2	1300.2
155°	1325.6	1329.2	1333.2	1339.7	1335.5
157.5°	1359.5	1362.3	1364.5	1373.6	1367.3
160°	1390.0	1392.7	1394.0	1401.7	1396.3
162.5°	1418.0	1418.0	1419.4	1428.0	1421.6
165°	1442.0	1440.7	1440.7	1449.8	1443.4
167.5°	1463.8	1459.8	1459.8	1468.8	1462.4
170°	1480.1	1476.5	1475.1	1484.2	1476.5
172.5°	1491.4	1487.8	1486.4	1495.5	1487.8
175°	1500.5	1496.9	1494.1	1503.2	1495.5
177.5°	1505.5	1501.9	1499.1	1506.8	1499.1
180°	1503.2	1503.2	1503.2	1503.2	1503.2



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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	12.10	11.95	12.96	14.04	10.68	11.66	11.52	12.53	13.60
	3H	12.78	13.66	13.63	14.54	15.64	12.30	13.19	13.16	14.06	15.17
	4H	13.37	14.21	14.24	15.09	16.20	12.90	13.74	13.77	14.61	15.73
	6H	13.78	14.55	14.66	15.43	16.56	13.30	14.07	14.18	14.96	16.09
	8H	13.88	14.62	14.77	15.52	16.65	13.41	14.15	14.30	15.05	16.18
	12H	13.94	14.64	14.83	15.54	16.69	13.46	14.16	14.35	15.06	16.21
4H	2H	11.58	12.42	12.46	13.30	14.42	11.24	12.08	12.11	12.96	14.07
	3H	13.46	14.16	14.35	15.07	16.20	13.07	13.77	13.95	14.68	15.81
	4H	14.18	14.82	15.08	15.73	16.88	13.77	14.41	14.67	15.32	16.48
	6H	14.70	15.25	15.61	16.18	17.34	14.29	14.84	15.20	15.78	16.93
	8H	14.85	15.37	15.77	16.30	17.47	14.44	14.96	15.36	15.88	17.06
	12H	14.93	15.40	15.87	16.34	17.52	14.51	14.98	15.45	15.92	17.10
8H	4H	14.39	14.90	15.30	15.83	17.00	14.03	14.54	14.94	15.47	16.64
	6H	15.02	15.45	15.96	16.42	17.59	14.66	15.09	15.60	16.05	17.23
	8H	15.25	15.62	16.20	16.58	17.77	14.88	15.25	15.83	16.21	17.40
	12H	15.38	15.72	16.34	16.67	17.90	15.00	15.33	15.95	16.28	17.52
12H	4H	14.38	14.84	15.31	15.79	16.96	14.03	14.49	14.96	15.44	16.61
	6H	15.05	15.43	16.00	16.39	17.58	14.70	15.08	15.65	16.04	17.23
	8H	15.30	15.64	16.26	16.59	17.82	14.95	15.28	15.90	16.23	17.47