

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: P904620

Luminaire Tested: DFN2DIP-TR4F0-060D050US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904620
REPORT IS A COMBINATION OF REPORTS P900392 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-060D050US830-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

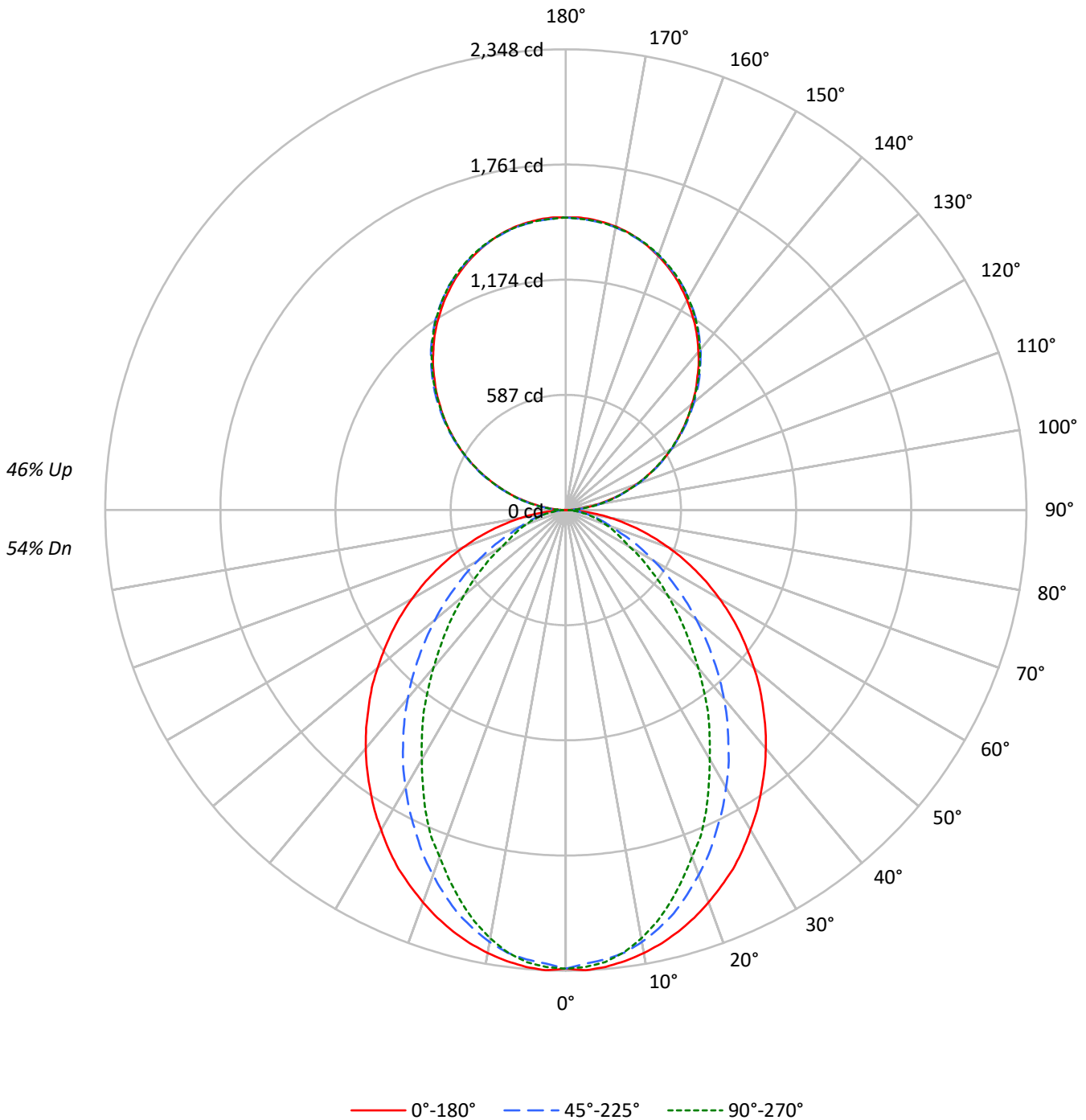
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8977.7 lumens
Efficiency: N/A
Efficacy: 98.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 91.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59	59	59	59	54
1	99	95	91	88	92	88	85	82	76	73	71	64	62	61	53	52	51	53	52	51	46
2	91	84	78	73	84	78	73	68	67	63	60	57	54	52	48	46	44	48	46	44	39
3	83	74	67	61	77	69	63	58	59	55	51	51	47	44	43	40	38	43	40	38	34
4	76	66	58	52	71	61	55	49	53	48	44	46	42	38	38	36	33	38	36	33	30
5	70	59	51	45	65	55	48	43	48	42	38	41	37	34	35	32	29	35	32	29	26
6	65	53	45	39	60	50	43	37	43	38	34	37	33	30	32	29	26	32	29	26	23
7	60	48	40	35	56	45	38	33	39	34	30	34	30	27	29	26	23	29	26	23	21
8	56	44	36	31	52	41	34	30	36	31	27	31	27	24	27	24	21	27	24	21	19
9	52	40	33	28	48	38	31	27	33	28	24	29	25	22	25	22	19	25	22	19	17
10	49	37	30	25	45	35	28	24	31	25	22	27	23	20	23	20	18	23	20	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1857	1857	1857
5°	1860	1827	1839
10°	1841	1792	1779
15°	1816	1732	1687
20°	1783	1651	1573
25°	1748	1559	1463
30°	1702	1465	1324
35°	1657	1364	1202
40°	1611	1260	1062
45°	1558	1144	935
50°	1502	1027	811
55°	1445	902	692
60°	1378	772	569
65°	1301	639	512
70°	1208	515	464
75°	1092	454	422
80°	922	381	365
85°	643	254	275

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1558 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.1	2.4
10°-20°	601.3	6.7
20°-30°	844.3	9.4
30°-40°	920.3	10.3
40°-50°	845.9	9.4
50°-60°	664.3	7.4
60°-70°	432.4	4.8
70°-80°	222.6	2.5
80°-90°	61.1	0.7
90°-100°	92.2	1.0
100°-110°	293.0	3.3
110°-120°	501.5	5.6
120°-130°	659.5	7.3
130°-140°	740.3	8.2
140°-150°	725.9	8.1
150°-160°	609.0	6.8
160°-170°	403.9	4.5
170°-180°	141.2	1.6
0°-30°	1664.7	18.5
0°-40°	2585.0	28.8
0°-60°	4095.1	45.6
0°-90°	4811.2	53.6
90°-120°	886.7	9.9
90°-150°	3012.5	33.6
90°-180°	4167.0	46.4
0°-180°	8977.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2337	2337	2337	2337	2337	
5°	2337	2327	2299	2318	2312	222
15°	2223	2200	2128	2088	2067	626
25°	2018	1950	1811	1724	1692	928
35°	1739	1631	1445	1312	1265	1088
45°	1421	1280	1058	907	857	1098
55°	1081	916	687	561	520	966
65°	730	558	368	296	290	724
75°	389	241	169	154	152	412
85°	91	46	40	40	40	104
90°	1	16	44	41	43	9
95°	66	78	80	80	78	73
105°	270	274	277	279	279	285
115°	503	510	508	507	503	498
125°	732	743	740	736	734	654
135°	947	961	963	962	958	732
145°	1149	1158	1166	1167	1162	718
155°	1314	1318	1322	1328	1324	605
165°	1430	1428	1428	1438	1431	403
175°	1488	1484	1482	1490	1483	141
180°	1490	1490	1490	1490	1490	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2337.3	2337.3	2337.3	2337.3	2337.3
2.5°	2347.9	2337.3	2313.9	2335.2	2331.0
5°	2337.3	2326.8	2299.1	2318.3	2312.0
7.5°	2318.3	2305.6	2276.1	2284.3	2273.8
10°	2292.8	2278.0	2235.9	2229.4	2216.8
12.5°	2261.3	2242.1	2184.9	2172.4	2149.0
15°	2223.1	2199.7	2127.9	2087.7	2066.6
17.5°	2178.7	2144.8	2055.9	2009.4	1975.6
20°	2127.9	2085.5	1979.8	1927.0	1880.4
22.5°	2072.9	2024.2	1901.5	1829.7	1798.0
25°	2018.0	1950.2	1810.6	1724.0	1692.1
27.5°	1952.5	1880.4	1726.0	1626.5	1577.9
30°	1882.6	1802.0	1632.9	1525.1	1467.9
32.5°	1814.9	1717.5	1544.3	1417.2	1364.2
35°	1738.8	1630.9	1444.8	1311.5	1264.8
37.5°	1664.7	1548.2	1351.7	1205.6	1152.8
40°	1586.4	1459.6	1254.2	1104.1	1049.1
42.5°	1506.1	1370.7	1157.1	1000.4	947.7
45°	1421.4	1279.6	1057.7	907.3	856.6
47.5°	1341.1	1191.0	962.5	812.2	765.7
50°	1252.3	1102.1	869.4	723.3	679.1
52.5°	1165.4	1006.7	780.5	640.9	600.8
55°	1080.8	915.9	687.4	560.6	520.4
57.5°	994.2	824.9	605.0	486.5	452.6
60°	905.3	736.1	518.2	410.5	376.5
62.5°	818.7	649.5	444.1	342.7	325.8
65°	729.8	558.4	368.1	296.2	289.7
67.5°	645.2	473.7	296.2	260.1	253.8
70°	556.3	391.3	245.2	224.2	215.7
72.5°	471.7	315.1	205.1	188.3	184.0
75°	389.2	241.0	169.2	154.4	152.4
77.5°	306.8	171.3	133.3	124.8	120.6
80°	230.5	122.7	101.4	93.1	93.1
82.5°	160.7	82.6	69.7	65.5	65.5
85°	90.9	46.5	40.2	40.2	40.2
87.5°	33.9	16.9	16.9	14.8	14.8
90°	1.3	16.2	44.0	41.4	42.7
92.5°	27.9	37.7	39.1	40.4	40.4
95°	65.6	78.2	80.4	80.4	78.2
97.5°	109.1	120.8	125.8	125.8	125.8
100°	159.5	169.8	173.4	173.4	172.1
102.5°	212.5	220.2	225.1	226.5	225.1
105°	270.5	274.1	276.8	279.0	279.0
107.5°	328.0	333.4	333.4	334.3	328.0
110°	383.7	391.0	391.0	391.0	387.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	443.9	451.6	450.3	446.7	443.9
115°	503.2	510.5	508.2	506.9	503.2
117.5°	562.1	572.0	565.7	562.1	558.6
120°	621.4	631.3	621.4	621.4	617.4
122.5°	675.3	688.0	681.6	678.1	675.3
125°	732.0	743.2	739.6	735.6	734.2
127.5°	787.2	801.2	796.3	790.8	787.2
130°	839.0	855.1	852.8	850.2	845.2
132.5°	896.9	909.5	910.4	904.1	900.5
135°	946.8	960.6	963.4	962.1	958.5
137.5°	1002.5	1013.7	1016.0	1015.0	1009.7
140°	1051.4	1062.7	1068.9	1068.9	1064.0
142.5°	1101.7	1113.0	1116.6	1117.9	1113.0
145°	1149.4	1158.4	1165.5	1167.0	1162.0
147.5°	1192.1	1203.3	1208.7	1211.0	1206.0
150°	1236.1	1243.8	1248.7	1252.7	1248.7
152.5°	1275.3	1282.9	1289.1	1294.1	1289.1
155°	1314.3	1317.9	1321.9	1328.2	1324.2
157.5°	1348.0	1350.7	1352.9	1362.0	1355.7
160°	1378.1	1380.8	1382.1	1389.8	1384.4
162.5°	1406.0	1406.0	1407.3	1415.9	1409.6
165°	1429.8	1428.4	1428.4	1437.5	1431.2
167.5°	1451.3	1447.3	1447.3	1456.3	1450.0
170°	1467.5	1464.0	1462.6	1471.6	1464.0
172.5°	1478.8	1475.2	1473.9	1482.8	1475.2
175°	1487.8	1484.1	1481.5	1490.4	1482.8
177.5°	1492.7	1489.1	1486.4	1494.0	1486.4
180°	1490.4	1490.4	1490.4	1490.4	1490.4



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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	9.62	10.48	10.55	11.43	12.65	5.59	6.45	6.53	7.40	8.62
	3H	11.30	12.07	12.24	13.02	14.27	6.79	7.55	7.73	8.51	9.75
	4H	11.91	12.64	12.87	13.60	14.85	7.24	7.96	8.20	8.92	10.18
	6H	12.33	13.00	13.30	13.97	15.23	7.56	8.23	8.53	9.20	10.46
	8H	12.46	13.10	13.44	14.08	15.34	7.65	8.29	8.63	9.27	10.54
	12H	12.52	13.13	13.50	14.10	15.39	7.70	8.30	8.68	9.28	10.57
4H	2H	9.64	10.37	10.61	11.33	12.58	6.19	6.92	7.16	7.88	9.13
	3H	11.47	12.08	12.45	13.07	14.34	7.55	8.15	8.52	9.14	10.41
	4H	12.17	12.72	13.15	13.70	14.99	8.10	8.65	9.08	9.63	10.92
	6H	12.68	13.16	13.68	14.16	15.46	8.52	8.99	9.51	10.00	11.29
	8H	12.86	13.30	13.86	14.30	15.61	8.65	9.09	9.64	10.09	11.40
	12H	12.96	13.35	13.97	14.37	15.68	8.72	9.11	9.73	10.13	11.44
8H	4H	12.14	12.58	13.13	13.58	14.88	8.38	8.82	9.37	9.82	11.13
	6H	12.70	13.07	13.72	14.11	15.41	8.90	9.26	9.92	10.31	11.61
	8H	12.92	13.24	13.95	14.27	15.59	9.09	9.41	10.12	10.44	11.76
	12H	13.06	13.34	14.09	14.37	15.73	9.21	9.50	10.24	10.52	11.88
12H	4H	12.09	12.49	13.10	13.51	14.82	8.38	8.78	9.40	9.80	11.11
	6H	12.68	13.00	13.71	14.03	15.35	8.95	9.27	9.98	10.30	11.62
	8H	12.90	13.19	13.93	14.21	15.57	9.16	9.44	10.19	10.47	11.83