

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: P910149

Luminaire Tested: DFN2DIP-TR4F0-080D050US840-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910149
REPORT IS A COMBINATION OF REPORTS P901916 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-080D050US840-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

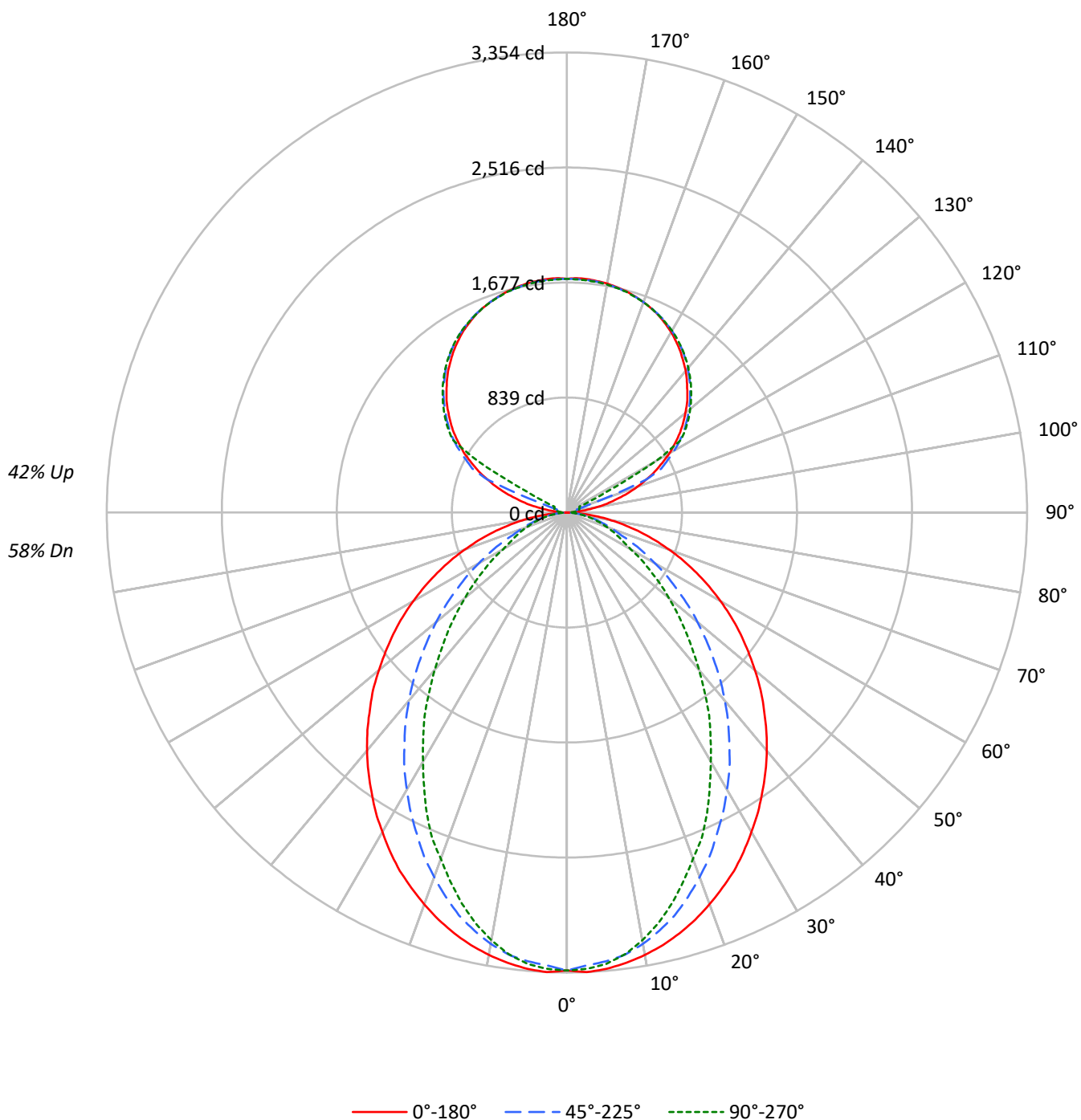
Lumens per Lamp: N/A
Luminaire Lumens: 11865.9 lumens
Efficiency: N/A
Efficacy: 105.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 112.9
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	109	109	109	109	102	102	102	102	88	88	88	75	75	75	63	63	63
1	100	96	92	89	93	90	86	83	78	75	73	67	65	64	57	56	55
2	92	84	79	74	85	79	74	69	69	65	62	59	57	54	51	49	47
3	84	75	68	62	78	70	64	59	61	56	52	53	49	46	45	43	41
4	77	67	59	53	72	62	56	50	55	49	45	48	44	40	41	38	35
5	71	60	52	46	66	56	49	44	49	44	39	43	39	35	37	34	31
6	66	54	46	40	61	51	43	38	45	39	35	39	35	31	34	31	28
7	61	49	41	35	57	46	39	34	41	35	31	36	31	28	31	28	25
8	57	44	37	32	53	42	35	30	37	32	28	33	28	25	29	25	23
9	53	41	33	28	49	39	32	27	34	29	25	30	26	23	27	23	20
10	49	38	30	26	46	36	29	25	32	26	23	28	24	21	25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2653	2653	2653
5°	2657	2610	2627
10°	2631	2559	2542
15°	2594	2475	2409
20°	2547	2358	2247
25°	2498	2227	2090
30°	2432	2093	1892
35°	2367	1949	1717
40°	2301	1800	1517
45°	2225	1635	1336
50°	2146	1468	1159
55°	2064	1289	989
60°	1969	1103	814
65°	1859	913	732
70°	1726	736	663
75°	1559	649	603
80°	1317	544	522
85°	919	363	392

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2225 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	312.9	2.6
10°-20°	859.1	7.2
20°-30°	1206.1	10.2
30°-40°	1314.7	11.1
40°-50°	1208.4	10.2
50°-60°	949.0	8.0
60°-70°	617.7	5.2
70°-80°	318.0	2.7
80°-90°	84.2	0.7
90°-100°	56.2	0.5
100°-110°	209.5	1.8
110°-120°	555.6	4.7
120°-130°	921.4	7.8
130°-140°	978.8	8.2
140°-150°	909.7	7.7
150°-160°	731.3	6.2
160°-170°	471.2	4.0
170°-180°	162.2	1.4
0°-30°	2378.1	20.0
0°-40°	3692.9	31.1
0°-60°	5850.2	49.3
0°-90°	6870.1	57.9
90°-120°	821.2	6.9
90°-150°	3631.1	30.6
90°-180°	4996.0	42.1
0°-180°	11865.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3339	3339	3339	3339	3339	
5°	3339	3324	3284	3312	3303	317
15°	3176	3142	3040	2982	2952	895
25°	2883	2786	2587	2463	2417	1326
35°	2484	2330	2064	1874	1807	1555
45°	2031	1828	1511	1296	1224	1568
55°	1544	1308	982	801	744	1380
65°	1043	798	526	423	414	1034
75°	556	344	242	221	218	588
85°	130	66	57	57	57	149
90°	1	15	25	31	33	11
95°	80	39	48	54	53	95
105°	375	412	75	89	94	401
115°	709	730	761	190	101	698
125°	1002	1019	1042	1051	1054	894
135°	1240	1260	1271	1284	1281	958
145°	1439	1438	1459	1467	1461	900
155°	1584	1574	1588	1596	1586	730
165°	1670	1662	1666	1674	1666	472
175°	1708	1699	1702	1710	1698	163
180°	1704	1704	1704	1704	1704	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3339.0	3339.0	3339.0	3339.0	3339.0
2.5°	3354.1	3339.0	3305.7	3336.1	3330.0
5°	3339.0	3324.0	3284.5	3311.8	3302.8
7.5°	3311.8	3293.8	3251.5	3263.4	3248.2
10°	3275.5	3254.4	3194.1	3184.8	3166.8
12.5°	3230.4	3203.1	3121.3	3103.3	3070.0
15°	3175.8	3142.5	3039.9	2982.5	2952.3
17.5°	3112.3	3063.9	2937.0	2870.6	2822.2
20°	3039.9	2979.3	2828.3	2753.0	2686.2
22.5°	2961.3	2891.7	2716.4	2613.8	2568.6
25°	2882.8	2786.0	2586.6	2462.9	2417.3
27.5°	2789.1	2686.2	2465.7	2323.7	2254.1
30°	2689.5	2574.3	2332.7	2178.8	2097.0
32.5°	2592.6	2453.6	2206.1	2024.6	1948.9
35°	2484.0	2329.8	2064.0	1873.6	1806.9
37.5°	2378.1	2211.8	1931.0	1722.2	1646.9
40°	2266.3	2085.2	1791.8	1577.3	1498.7
42.5°	2151.5	1958.2	1652.9	1429.3	1353.8
45°	2030.6	1828.1	1511.0	1296.2	1223.8
47.5°	1915.9	1701.4	1375.0	1160.2	1093.9
50°	1788.9	1574.5	1242.0	1033.3	970.1
52.5°	1664.9	1438.1	1115.0	915.6	858.3
55°	1544.0	1308.4	982.0	800.8	743.5
57.5°	1420.3	1178.5	864.3	695.1	646.6
60°	1293.2	1051.6	740.2	586.3	538.0
62.5°	1169.5	927.8	634.5	489.6	465.5
65°	1042.6	797.6	525.7	423.2	413.8
67.5°	921.7	676.8	423.2	371.5	362.6
70°	794.8	559.2	350.4	320.2	308.1
72.5°	673.9	450.1	293.1	269.0	262.9
75°	555.9	344.4	241.8	220.6	217.7
77.5°	438.3	244.6	190.5	178.2	172.2
80°	329.2	175.4	144.9	133.0	133.0
82.5°	229.5	118.0	99.7	93.6	93.6
85°	129.9	66.3	57.4	57.4	57.4
87.5°	48.4	24.0	24.0	21.2	21.2
90°	1.2	14.7	24.6	30.9	33.2
92.5°	30.9	26.0	29.6	32.1	33.2
95°	80.1	39.4	48.1	54.3	53.0
97.5°	144.2	43.2	62.8	66.7	67.8
100°	218.3	49.4	70.3	80.1	82.6
102.5°	299.6	297.2	72.8	86.2	90.1
105°	374.9	411.9	75.2	88.8	93.7
107.5°	462.4	493.1	77.8	91.2	96.2
110°	546.3	572.1	215.8	92.5	97.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	625.2	647.3	626.4	94.9	98.7
115°	709.0	729.9	760.8	190.0	101.2
117.5°	781.7	806.4	827.5	651.0	328.0
120°	863.1	881.6	903.8	918.7	752.1
122.5°	932.1	951.9	976.6	984.0	985.3
125°	1002.4	1018.6	1042.0	1050.6	1054.3
127.5°	1066.5	1083.8	1102.5	1114.7	1115.9
130°	1127.0	1146.8	1160.2	1173.9	1172.8
132.5°	1188.7	1204.8	1218.2	1229.4	1228.2
135°	1240.5	1260.3	1271.2	1283.7	1281.2
137.5°	1294.6	1309.5	1321.9	1334.2	1330.6
140°	1347.7	1357.7	1371.1	1382.2	1376.1
142.5°	1392.2	1400.9	1416.8	1426.6	1420.5
145°	1439.1	1437.7	1458.6	1467.3	1461.2
147.5°	1479.7	1475.9	1496.9	1503.1	1498.2
150°	1519.1	1510.6	1530.2	1537.6	1531.5
152.5°	1552.4	1542.6	1561.1	1568.5	1559.8
155°	1584.5	1573.5	1588.2	1595.6	1585.8
157.5°	1610.3	1600.5	1611.6	1620.3	1610.3
160°	1632.6	1625.2	1632.6	1639.9	1631.3
162.5°	1652.2	1645.0	1651.0	1659.7	1648.6
165°	1669.5	1662.2	1665.9	1674.5	1665.9
167.5°	1683.1	1675.7	1679.5	1688.1	1677.0
170°	1694.3	1686.8	1689.3	1697.9	1686.8
172.5°	1701.6	1694.3	1696.8	1705.4	1694.3
175°	1707.8	1699.1	1701.6	1710.2	1697.9
177.5°	1710.2	1701.6	1702.9	1711.5	1700.4
180°	1704.0	1704.0	1704.0	1704.0	1704.0

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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	11.24	12.14	12.13	13.05	14.20	7.21	8.11	8.11	9.02	10.18
	3H	12.92	13.73	13.83	14.64	15.83	8.41	9.21	9.31	10.13	11.31
	4H	13.53	14.29	14.45	15.22	16.41	8.86	9.62	9.78	10.54	11.74
	6H	13.96	14.66	14.89	15.59	16.79	9.19	9.89	10.12	10.81	12.02
	8H	14.09	14.75	15.03	15.70	16.90	9.28	9.94	10.22	10.89	12.09
	12H	14.15	14.78	15.09	15.72	16.95	9.33	9.96	10.27	10.90	12.13
4H	2H	11.27	12.02	12.19	12.95	14.14	7.82	8.57	8.74	9.50	10.69
	3H	13.10	13.73	14.04	14.69	15.89	9.17	9.80	10.11	10.76	11.96
	4H	13.80	14.37	14.74	15.32	16.55	9.72	10.30	10.67	11.25	12.48
	6H	14.31	14.81	15.27	15.78	17.01	10.15	10.64	11.11	11.62	12.85
	8H	14.49	14.95	15.45	15.92	17.16	10.28	10.74	11.24	11.71	12.95
	12H	14.59	15.00	15.57	15.99	17.24	10.35	10.76	11.33	11.75	13.00
8H	4H	13.77	14.23	14.73	15.20	16.44	10.01	10.47	10.97	11.44	12.68
	6H	14.34	14.72	15.32	15.73	16.97	10.53	10.91	11.52	11.92	13.16
	8H	14.55	14.89	15.55	15.89	17.15	10.72	11.06	11.72	12.06	13.32
	12H	14.70	14.99	15.69	15.98	17.29	10.85	11.14	11.84	12.13	13.44
12H	4H	13.72	14.14	14.70	15.12	16.37	10.02	10.43	11.00	11.42	12.67
	6H	14.31	14.65	15.31	15.65	16.91	10.58	10.92	11.58	11.91	13.18
	8H	14.54	14.83	15.53	15.82	17.13	10.80	11.09	11.79	12.08	13.39