

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: P923681

Luminaire Tested: DFN2DIP-TR4F0-050D050US940-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923681
REPORT IS A COMBINATION OF REPORTS P901910 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D050US940-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

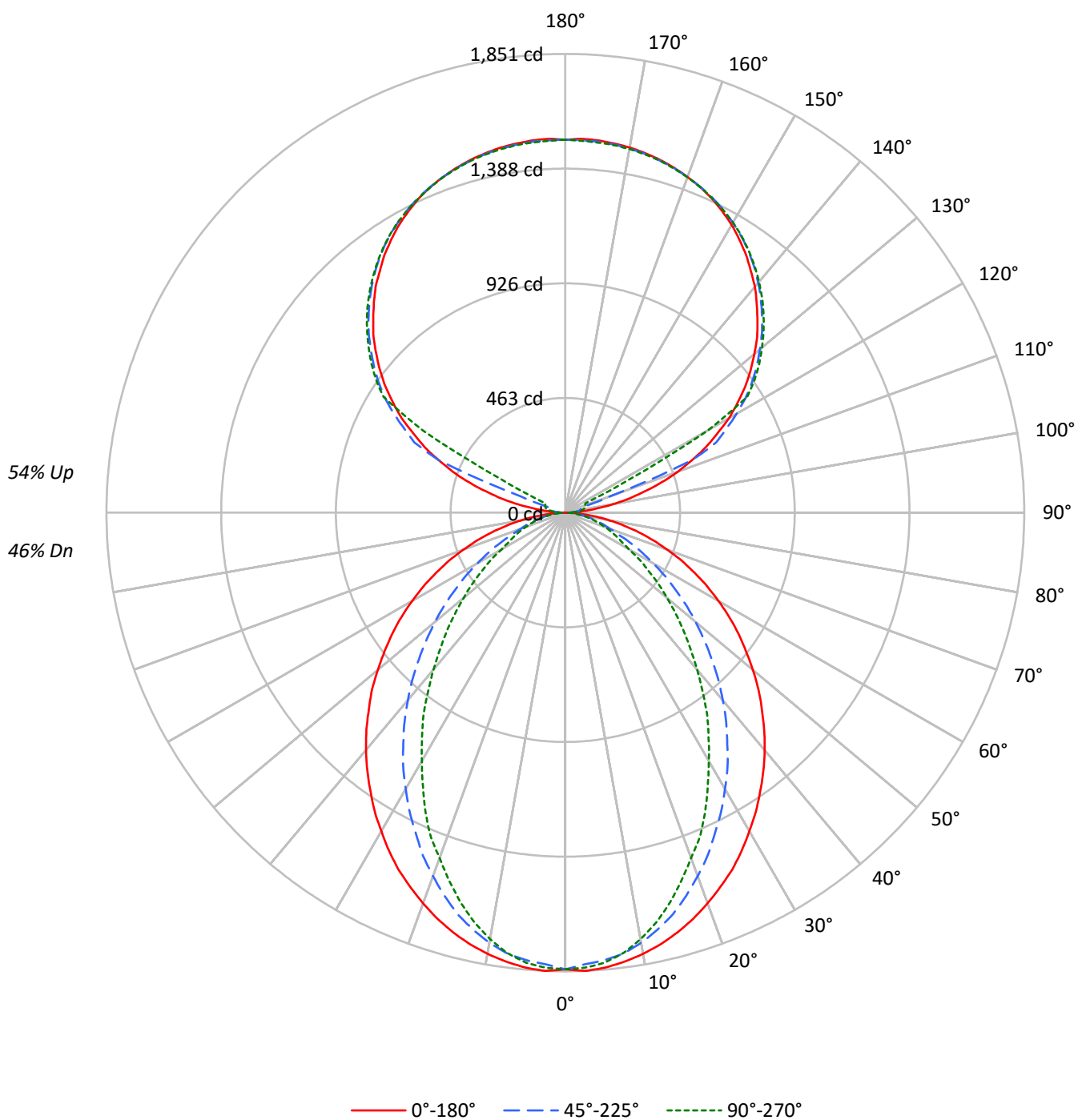
Lumens per Lamp: N/A
Luminaire Lumens: 8203.8 lumens
Efficiency: N/A
Efficacy: 102.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 79.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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	50	30	10
RCR																				
0	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53			46
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45			40
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39			34
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34			29
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29			26
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26			23
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23			20
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21			18
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19			16
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17			15
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15			13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1464	1464	1464
5°	1466	1441	1450
10°	1452	1412	1403
15°	1432	1366	1330
20°	1405	1301	1240
25°	1378	1229	1154
30°	1342	1155	1044
35°	1306	1076	948
40°	1270	993	837
45°	1228	902	737
50°	1185	810	639
55°	1139	711	546
60°	1086	608	449
65°	1026	504	404
70°	953	406	366
75°	861	358	332
80°	727	300	288
85°	507	201	217

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1228 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.7	2.1
10°-20°	474.1	5.8
20°-30°	665.6	8.1
30°-40°	725.6	8.8
40°-50°	666.9	8.1
50°-60°	523.7	6.4
60°-70°	340.9	4.2
70°-80°	175.5	2.1
80°-90°	47.5	0.6
90°-100°	49.6	0.6
100°-110°	185.0	2.3
110°-120°	490.6	6.0
120°-130°	813.6	9.9
130°-140°	864.3	10.5
140°-150°	803.2	9.8
150°-160°	645.8	7.9
160°-170°	416.1	5.1
170°-180°	143.2	1.7
0°-30°	1312.4	16.0
0°-40°	2038.0	24.8
0°-60°	3228.6	39.4
0°-90°	3792.4	46.2
90°-120°	725.2	8.8
90°-150°	3206.2	39.1
90°-180°	4411.0	53.8
0°-180°	8203.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1843	1843	1843	1843	1843	
5°	1843	1834	1813	1828	1823	175
15°	1753	1734	1678	1646	1629	494
25°	1591	1538	1427	1359	1334	732
35°	1371	1286	1139	1034	997	858
45°	1121	1009	834	715	675	865
55°	852	722	542	442	410	761
65°	575	440	290	234	228	570
75°	307	190	133	122	120	324
85°	72	37	32	32	32	82
90°	1	13	22	27	29	8
95°	71	35	42	48	47	84
105°	331	364	66	78	83	354
115°	626	644	672	168	89	616
125°	885	899	920	928	931	789
135°	1095	1113	1122	1134	1131	846
145°	1271	1270	1288	1296	1290	795
155°	1399	1389	1402	1409	1400	645
165°	1474	1468	1471	1478	1471	416
175°	1508	1500	1502	1510	1499	144
180°	1505	1505	1505	1505	1505	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1842.7	1842.7	1842.7	1842.7	1842.7
2.5°	1851.0	1842.7	1824.4	1841.1	1837.7
5°	1842.7	1834.4	1812.7	1827.6	1822.7
7.5°	1827.6	1817.8	1794.4	1801.0	1792.6
10°	1807.7	1796.0	1762.7	1757.7	1747.7
12.5°	1782.7	1767.7	1722.6	1712.7	1694.2
15°	1752.7	1734.3	1677.7	1646.0	1629.3
17.5°	1717.6	1691.0	1620.9	1584.2	1557.5
20°	1677.7	1644.2	1560.8	1519.3	1482.5
22.5°	1634.3	1595.9	1499.1	1442.5	1417.6
25°	1590.9	1537.5	1427.4	1359.1	1334.0
27.5°	1539.3	1482.5	1360.8	1282.4	1244.0
30°	1484.3	1420.8	1287.4	1202.4	1157.3
32.5°	1430.8	1354.1	1217.5	1117.3	1075.6
35°	1370.8	1285.8	1139.1	1033.9	997.2
37.5°	1312.4	1220.7	1065.7	950.5	908.9
40°	1250.7	1150.8	988.8	870.5	827.2
42.5°	1187.4	1080.7	912.2	788.7	747.2
45°	1120.7	1008.9	833.8	715.3	675.3
47.5°	1057.3	939.0	758.8	640.3	603.7
50°	987.3	868.9	685.5	570.2	535.4
52.5°	918.8	793.7	615.4	505.3	473.7
55°	852.1	722.0	541.9	441.9	410.3
57.5°	783.8	650.4	477.0	383.6	356.9
60°	713.7	580.3	408.5	323.6	296.9
62.5°	645.4	512.0	350.2	270.2	256.9
65°	575.3	440.2	290.2	233.5	228.5
67.5°	508.6	373.5	233.5	205.1	200.1
70°	438.6	308.5	193.4	176.7	170.0
72.5°	371.9	248.4	161.8	148.5	145.1
75°	306.8	190.0	133.4	121.7	120.1
77.5°	241.8	135.0	105.1	98.4	95.0
80°	181.7	96.8	80.0	73.4	73.4
82.5°	126.7	65.1	55.0	51.6	51.6
85°	71.7	36.6	31.7	31.7	31.7
87.5°	26.8	13.3	13.3	11.7	11.7
90°	1.1	13.0	21.8	27.3	29.3
92.5°	27.3	22.9	26.1	28.4	29.3
95°	70.7	34.8	42.4	48.0	46.8
97.5°	127.3	38.2	55.5	58.9	59.8
100°	192.8	43.6	62.1	70.7	72.9
102.5°	264.6	262.4	64.3	76.2	79.5
105°	331.0	363.7	66.4	78.4	82.8
107.5°	408.3	435.4	68.7	80.5	85.0
110°	482.4	505.2	190.6	81.7	86.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	552.1	571.6	553.1	83.8	87.1
115°	626.1	644.5	671.8	167.7	89.3
117.5°	690.3	712.0	730.7	574.8	289.6
120°	762.1	778.5	798.1	811.2	664.1
122.5°	823.0	840.5	862.4	868.9	870.0
125°	885.1	899.4	920.1	927.6	930.9
127.5°	941.7	957.0	973.5	984.3	985.3
130°	995.1	1012.6	1024.5	1036.5	1035.5
132.5°	1049.6	1063.8	1075.7	1085.6	1084.5
135°	1095.4	1112.9	1122.5	1133.5	1131.3
137.5°	1143.2	1156.3	1167.2	1178.1	1174.9
140°	1190.0	1198.8	1210.7	1220.5	1215.1
142.5°	1229.3	1237.0	1251.1	1259.7	1254.3
145°	1270.7	1269.5	1288.0	1295.7	1290.2
147.5°	1306.5	1303.2	1321.8	1327.2	1322.9
150°	1341.4	1333.8	1351.2	1357.7	1352.3
152.5°	1370.7	1362.1	1378.4	1385.0	1377.3
155°	1399.1	1389.4	1402.4	1408.9	1400.3
157.5°	1421.9	1413.3	1423.1	1430.7	1421.9
160°	1441.6	1435.0	1441.6	1448.0	1440.5
162.5°	1458.9	1452.5	1457.9	1465.5	1455.7
165°	1474.2	1467.8	1471.0	1478.5	1471.0
167.5°	1486.2	1479.6	1483.0	1490.6	1480.8
170°	1496.0	1489.4	1491.7	1499.2	1489.4
172.5°	1502.5	1496.0	1498.3	1505.8	1496.0
175°	1508.0	1500.3	1502.5	1510.1	1499.2
177.5°	1510.1	1502.5	1503.7	1511.3	1501.5
180°	1504.7	1504.7	1504.7	1504.7	1504.7

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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	8.10	8.90	9.10	9.91	11.23	4.08	4.88	5.07	5.88	7.21
	3H	9.78	10.49	10.78	11.50	12.85	5.26	5.98	6.27	6.99	8.34
	4H	10.38	11.06	11.40	12.08	13.43	5.71	6.39	6.73	7.40	8.76
	6H	10.80	11.43	11.83	12.45	13.81	6.03	6.66	7.06	7.68	9.04
	8H	10.93	11.52	11.96	12.56	13.92	6.12	6.72	7.16	7.75	9.11
	12H	10.99	11.55	12.03	12.58	13.97	6.17	6.73	7.21	7.76	9.15
4H	2H	8.12	8.79	9.14	9.81	11.16	4.67	5.35	5.69	6.36	7.72
	3H	9.94	10.51	10.98	11.55	12.92	6.02	6.58	7.05	7.62	8.99
	4H	10.63	11.15	11.67	12.18	13.58	6.56	7.08	7.60	8.11	9.51
	6H	11.15	11.59	12.20	12.65	14.04	6.98	7.42	8.03	8.48	9.87
	8H	11.32	11.73	12.37	12.79	14.19	7.11	7.52	8.16	8.57	9.98
	12H	11.42	11.79	12.48	12.85	14.26	7.18	7.55	8.24	8.61	10.02
8H	4H	10.60	11.01	11.65	12.06	13.47	6.84	7.25	7.89	8.31	9.71
	6H	11.17	11.51	12.24	12.60	14.00	7.36	7.70	8.43	8.79	10.19
	8H	11.38	11.68	12.46	12.76	14.18	7.55	7.85	8.63	8.93	10.35
	12H	11.52	11.78	12.60	12.85	14.31	7.67	7.93	8.75	9.00	10.46
12H	4H	10.55	10.92	11.62	11.99	13.40	6.85	7.22	7.91	8.28	9.69
	6H	11.14	11.44	12.22	12.52	13.94	7.41	7.71	8.49	8.79	10.20
	8H	11.36	11.62	12.44	12.69	14.15	7.62	7.88	8.70	8.95	10.41