

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: P918264

Luminaire Tested: DFN2DIP-TR4F0-060D060US930-RLFL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918264
REPORT IS A COMBINATION OF REPORTS P900410 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-060D060US930-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

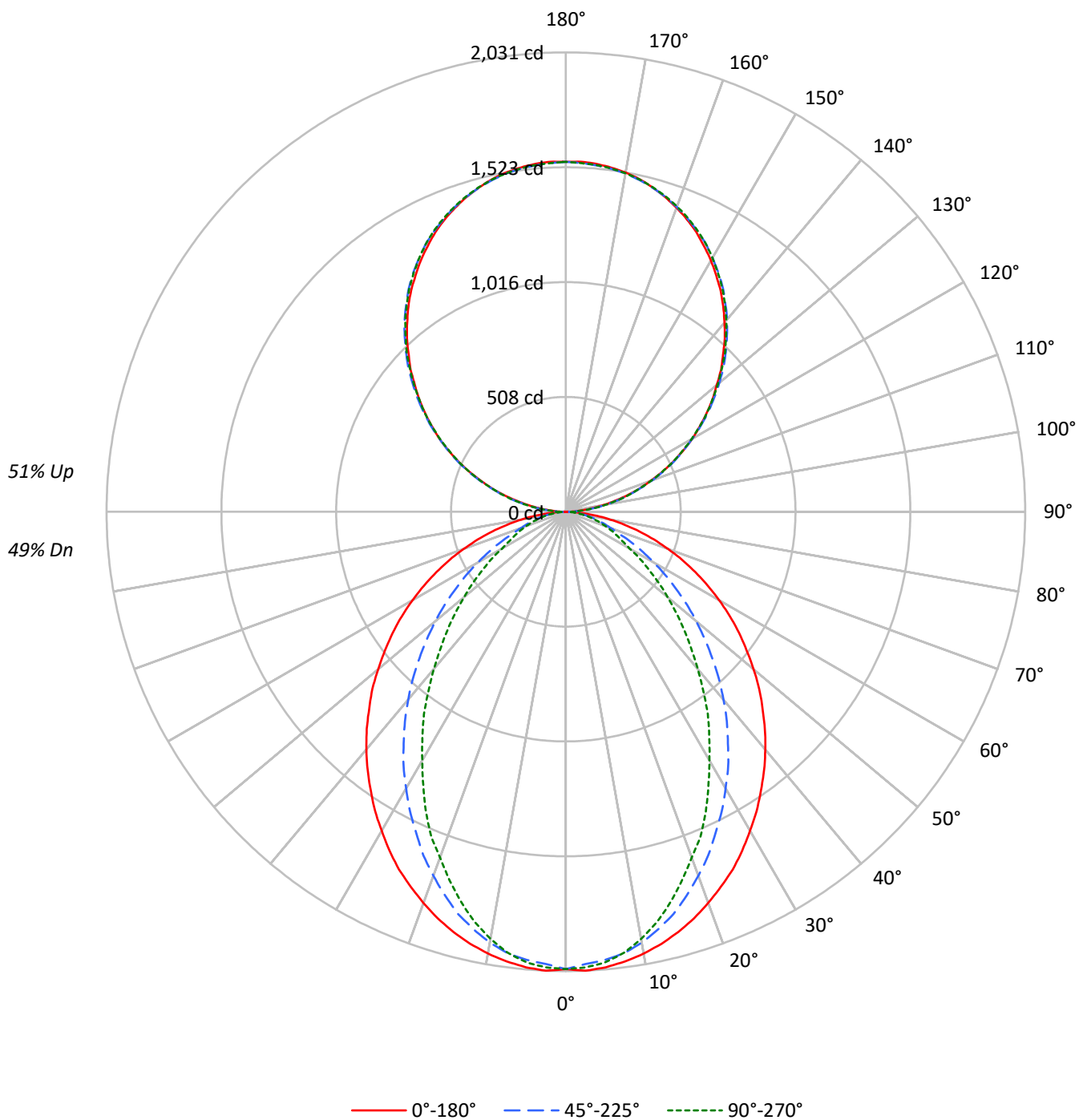
Lumens per Lamp: N/A
Luminaire Lumens: 8487.2 lumens
Efficiency: N/A
Efficacy: 86.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 98.1
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1606	1606	1606
5°	1609	1581	1591
10°	1593	1550	1539
15°	1571	1498	1459
20°	1542	1428	1361
25°	1512	1349	1266
30°	1472	1267	1145
35°	1433	1180	1040
40°	1393	1090	919
45°	1347	990	809
50°	1300	889	702
55°	1250	781	598
60°	1192	668	493
65°	1126	553	443
70°	1045	446	401
75°	944	393	365
80°	797	329	316
85°	556	220	237

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1347 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.5	2.2
10°-20°	520.2	6.1
20°-30°	730.3	8.6
30°-40°	796.1	9.4
40°-50°	731.7	8.6
50°-60°	574.6	6.8
60°-70°	374.0	4.4
70°-80°	192.5	2.3
80°-90°	53.5	0.6
90°-100°	95.7	1.1
100°-110°	304.2	3.6
110°-120°	520.6	6.1
120°-130°	684.6	8.1
130°-140°	768.4	9.1
140°-150°	753.5	8.9
150°-160°	632.1	7.4
160°-170°	419.2	4.9
170°-180°	146.5	1.7
0°-30°	1439.9	17.0
0°-40°	2236.0	26.3
0°-60°	3542.3	41.7
0°-90°	4162.4	49.0
90°-120°	920.5	10.8
90°-150°	3127.0	36.8
90°-180°	4325.0	51.0
0°-180°	8487.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2022	2022	2022	2022	2022	
5°	2022	2013	1989	2005	2000	192
15°	1923	1903	1841	1806	1788	542
25°	1746	1687	1566	1491	1464	803
35°	1504	1411	1250	1134	1094	941
45°	1230	1107	915	785	741	950
55°	935	792	595	485	450	835
65°	631	483	318	256	251	626
75°	337	208	146	134	132	356
85°	79	40	35	35	35	90
90°	1	17	46	43	44	8
95°	68	81	84	84	81	76
105°	281	284	287	290	290	296
115°	522	530	528	526	522	517
125°	760	771	768	764	762	679
135°	983	997	1000	999	995	760
145°	1193	1202	1210	1211	1206	745
155°	1364	1368	1372	1379	1374	628
165°	1484	1483	1483	1492	1486	419
175°	1544	1541	1538	1547	1539	147
180°	1547	1547	1547	1547	1547	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2021.8	2021.8	2021.8	2021.8	2021.8
2.5°	2030.9	2021.8	2001.6	2020.0	2016.3
5°	2021.8	2012.6	1988.8	2005.3	1999.8
7.5°	2005.3	1994.4	1968.8	1976.0	1966.8
10°	1983.3	1970.5	1934.1	1928.4	1917.5
12.5°	1956.0	1939.4	1889.9	1879.1	1858.9
15°	1923.0	1902.7	1840.6	1805.9	1787.6
17.5°	1884.6	1855.2	1778.3	1738.1	1708.9
20°	1840.6	1803.9	1712.5	1666.9	1626.5
22.5°	1793.1	1750.9	1644.8	1582.7	1555.3
25°	1745.6	1686.9	1566.2	1491.3	1463.7
27.5°	1688.9	1626.5	1493.0	1407.0	1364.9
30°	1628.5	1558.8	1412.4	1319.2	1269.7
32.5°	1569.9	1485.6	1335.8	1225.9	1180.1
35°	1504.1	1410.7	1249.8	1134.4	1094.0
37.5°	1440.0	1339.2	1169.2	1042.8	997.2
40°	1372.2	1262.6	1084.9	955.0	907.5
42.5°	1302.8	1185.7	1000.9	865.4	819.8
45°	1229.6	1106.8	914.9	784.8	740.9
47.5°	1160.1	1030.2	832.6	702.5	662.3
50°	1083.2	953.3	752.0	625.7	587.4
52.5°	1008.0	870.8	675.1	554.4	519.7
55°	934.9	792.2	594.6	484.9	450.1
57.5°	860.0	713.5	523.3	420.9	391.5
60°	783.1	636.7	448.3	355.1	325.7
62.5°	708.2	561.8	384.2	296.4	281.8
65°	631.3	483.0	318.4	256.2	250.6
67.5°	558.1	409.8	256.2	225.0	219.6
70°	481.2	338.5	212.1	194.0	186.5
72.5°	408.1	272.6	177.4	162.9	159.1
75°	336.6	208.5	146.3	133.5	131.8
77.5°	265.4	148.1	115.3	107.9	104.3
80°	199.3	106.2	87.7	80.6	80.6
82.5°	139.0	71.4	60.3	56.7	56.7
85°	78.6	40.2	34.7	34.7	34.7
87.5°	29.4	14.6	14.6	12.8	12.8
90°	1.4	16.8	45.7	42.9	44.3
92.5°	28.9	39.2	40.6	42.0	42.0
95°	68.1	81.1	83.5	83.5	81.1
97.5°	113.3	125.5	130.6	130.6	130.6
100°	165.6	176.3	180.0	180.0	178.6
102.5°	220.6	228.5	233.7	235.1	233.7
105°	280.8	284.5	287.3	289.7	289.7
107.5°	340.5	346.1	346.1	347.0	340.5
110°	398.4	405.8	405.8	405.8	402.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	460.8	468.7	467.3	463.6	460.8
115°	522.4	529.9	527.5	526.1	522.4
117.5°	583.5	593.8	587.2	583.5	579.8
120°	645.1	655.3	645.1	645.1	640.8
122.5°	701.0	714.0	707.5	703.8	701.0
125°	759.8	771.4	767.7	763.5	762.1
127.5°	817.2	831.6	826.5	820.9	817.2
130°	870.8	887.6	885.3	882.5	877.3
132.5°	931.0	944.0	944.9	938.4	934.7
135°	982.8	997.2	1000.0	998.6	994.8
137.5°	1040.6	1052.2	1054.6	1053.6	1048.1
140°	1091.4	1103.1	1109.6	1109.6	1104.5
142.5°	1143.6	1155.3	1159.0	1160.4	1155.3
145°	1193.1	1202.4	1209.9	1211.3	1206.2
147.5°	1237.4	1249.0	1254.7	1256.9	1251.8
150°	1283.1	1291.0	1296.2	1300.3	1296.2
152.5°	1323.6	1331.6	1338.1	1343.3	1338.1
155°	1364.2	1368.0	1372.1	1378.8	1374.5
157.5°	1399.2	1402.1	1404.4	1413.7	1407.2
160°	1430.5	1433.3	1434.7	1442.6	1437.0
162.5°	1459.4	1459.4	1460.8	1469.7	1463.1
165°	1484.1	1482.7	1482.7	1492.1	1485.6
167.5°	1506.5	1502.4	1502.4	1511.6	1505.1
170°	1523.3	1519.6	1518.2	1527.5	1519.6
172.5°	1535.0	1531.2	1529.8	1539.1	1531.2
175°	1544.3	1540.6	1537.7	1547.1	1539.1
177.5°	1549.4	1545.7	1542.9	1550.8	1542.9
180°	1547.1	1547.1	1547.1	1547.1	1547.1

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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	8.70	9.52	9.67	10.50	11.79	4.67	5.49	5.64	6.47	7.76
	3H	10.37	11.11	11.36	12.10	13.41	5.86	6.59	6.84	7.59	8.89
	4H	10.98	11.68	11.98	12.67	13.99	6.31	7.01	7.31	8.00	9.32
	6H	11.40	12.04	12.41	13.04	14.37	6.63	7.27	7.64	8.27	9.60
	8H	11.53	12.14	12.54	13.15	14.48	6.72	7.33	7.74	8.35	9.67
	12H	11.59	12.17	12.61	13.18	14.53	6.77	7.34	7.78	8.35	9.70
4H	2H	8.71	9.41	9.72	10.40	11.72	5.26	5.96	6.27	6.95	8.27
	3H	10.54	11.12	11.55	12.14	13.47	6.62	7.19	7.63	8.22	9.55
	4H	11.23	11.76	12.25	12.78	14.13	7.16	7.69	8.18	8.71	10.06
	6H	11.75	12.20	12.78	13.24	14.59	7.58	8.04	8.61	9.08	10.43
	8H	11.92	12.35	12.95	13.38	14.74	7.71	8.14	8.74	9.17	10.53
	12H	12.02	12.40	13.07	13.45	14.82	7.78	8.16	8.83	9.21	10.58
8H	4H	11.20	11.62	12.23	12.66	14.02	7.44	7.87	8.47	8.90	10.26
	6H	11.77	12.12	12.82	13.19	14.55	7.96	8.31	9.02	9.39	10.75
	8H	11.98	12.29	13.04	13.35	14.73	8.15	8.46	9.22	9.52	10.90
	12H	12.12	12.39	13.19	13.45	14.87	8.27	8.54	9.34	9.60	11.02
12H	4H	11.15	11.53	12.20	12.58	13.95	7.45	7.83	8.50	8.88	10.25
	6H	11.74	12.05	12.80	13.11	14.49	8.01	8.32	9.07	9.38	10.76
	8H	11.96	12.23	13.03	13.29	14.71	8.22	8.49	9.29	9.55	10.97