

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: P909878

Luminaire Tested: DFN2DIP-TR3F0-050D050US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909878
REPORT IS A COMBINATION OF REPORTS P900304 AND P897195
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-050D050US840-RLLFLL
Description: 3 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

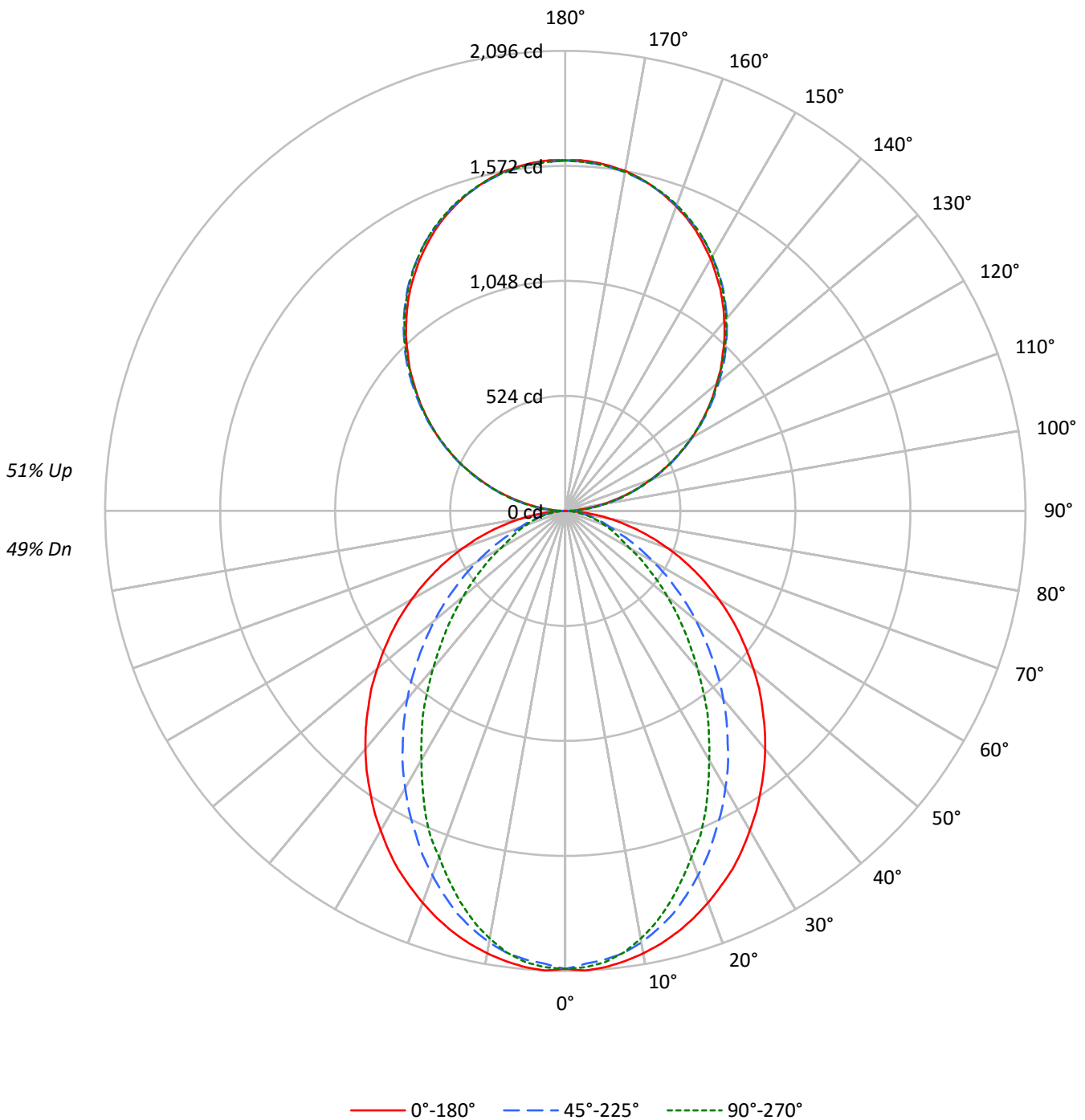
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8760.6 lumens
Efficiency: N/A
Efficacy: 106.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 82.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55	49				
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48	42				
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41	36				
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35	31				
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31	27				
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27	24				
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24	21				
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22	19				
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20	17				
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18	16				
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16	14				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2600	2600	2600
5°	2603	2557	2574
10°	2576	2505	2488
15°	2539	2420	2357
20°	2491	2304	2197
25°	2441	2174	2042
30°	2375	2041	1847
35°	2310	1898	1675
40°	2244	1751	1479
45°	2168	1588	1300
50°	2089	1423	1126
55°	2006	1247	959
60°	1910	1064	788
65°	1799	878	707
70°	1665	705	638
75°	1496	616	576
80°	1252	510	494
85°	852	331	362

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2168 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.6	2.2
10°-20°	536.9	6.1
20°-30°	753.8	8.6
30°-40°	821.7	9.4
40°-50°	755.2	8.6
50°-60°	593.1	6.8
60°-70°	386.1	4.4
70°-80°	198.7	2.3
80°-90°	55.3	0.6
90°-100°	98.8	1.1
100°-110°	314.0	3.6
110°-120°	537.3	6.1
120°-130°	706.6	8.1
130°-140°	793.2	9.1
140°-150°	777.8	8.9
150°-160°	652.5	7.4
160°-170°	432.7	4.9
170°-180°	151.2	1.7
0°-30°	1486.3	17.0
0°-40°	2308.0	26.3
0°-60°	3656.4	41.7
0°-90°	4296.5	49.0
90°-120°	950.1	10.8
90°-150°	3227.7	36.8
90°-180°	4464.0	51.0
0°-180°	8760.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2087	2087	2087	2087	2087	
5°	2087	2078	2053	2070	2064	198
15°	1985	1964	1900	1864	1845	559
25°	1802	1741	1617	1539	1511	829
35°	1552	1456	1290	1171	1129	972
45°	1269	1143	944	810	765	980
55°	965	818	614	500	465	862
65°	652	499	329	264	259	646
75°	348	215	151	138	136	368
85°	81	42	36	36	36	93
90°	1	17	47	44	46	9
95°	70	84	86	86	84	78
105°	290	294	297	299	299	306
115°	539	547	544	543	539	533
125°	784	796	792	788	787	701
135°	1014	1029	1032	1031	1027	784
145°	1232	1241	1249	1250	1245	769
155°	1408	1412	1416	1423	1419	648
165°	1532	1530	1530	1540	1533	432
175°	1594	1590	1587	1597	1589	151
180°	1597	1597	1597	1597	1597	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2086.9	2086.9	2086.9	2086.9	2086.9
2.5°	2096.3	2086.9	2066.1	2085.1	2081.2
5°	2086.9	2077.5	2052.9	2069.8	2064.3
7.5°	2069.8	2058.6	2032.2	2039.6	2030.1
10°	2047.2	2034.0	1996.3	1990.5	1979.2
12.5°	2018.9	2002.0	1950.9	1939.6	1918.7
15°	1984.9	1964.1	1900.0	1864.1	1845.2
17.5°	1945.2	1915.0	1835.6	1794.1	1763.8
20°	1900.0	1862.1	1767.7	1720.6	1678.9
22.5°	1850.9	1807.4	1697.8	1633.7	1605.4
25°	1801.7	1741.2	1616.6	1539.2	1510.8
27.5°	1743.2	1678.9	1541.1	1452.3	1408.9
30°	1680.9	1609.0	1457.9	1361.7	1310.6
32.5°	1620.4	1533.5	1378.8	1265.4	1218.1
35°	1552.5	1456.1	1290.0	1170.9	1129.3
37.5°	1486.3	1382.4	1206.9	1076.4	1029.4
40°	1416.4	1303.2	1119.8	985.8	936.8
42.5°	1344.7	1223.9	1033.1	893.2	846.2
45°	1269.2	1142.6	944.3	810.1	764.8
47.5°	1197.4	1063.4	859.4	725.2	683.7
50°	1118.1	984.0	776.3	645.8	606.3
52.5°	1040.6	898.9	696.9	572.3	536.4
55°	965.0	817.7	613.7	500.5	464.6
57.5°	887.7	736.6	540.2	434.4	404.1
60°	808.3	657.2	462.6	366.5	336.2
62.5°	730.9	579.9	396.6	306.0	290.9
65°	651.6	498.6	328.6	264.5	258.7
67.5°	576.0	423.0	264.5	232.3	226.6
70°	496.8	349.4	219.0	200.2	192.6
72.5°	421.2	281.3	183.2	168.1	164.3
75°	347.5	215.2	151.1	137.8	136.0
77.5°	273.9	152.9	119.1	111.4	107.6
80°	205.8	109.6	90.6	83.1	83.1
82.5°	143.5	73.7	62.3	58.5	58.5
85°	81.2	41.5	35.9	35.9	35.9
87.5°	30.3	15.0	15.0	13.2	13.2
90°	1.4	17.4	47.2	44.3	45.7
92.5°	29.9	40.4	41.9	43.3	43.3
95°	70.3	83.8	86.1	86.1	83.8
97.5°	116.9	129.5	134.8	134.8	134.8
100°	170.9	182.0	185.8	185.8	184.4
102.5°	227.7	235.9	241.2	242.7	241.2
105°	289.8	293.7	296.6	298.9	298.9
107.5°	351.4	357.2	357.2	358.2	351.4
110°	411.1	418.9	418.9	418.9	415.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	475.6	483.8	482.4	478.6	475.6
115°	539.2	546.9	544.5	543.1	539.2
117.5°	602.3	612.9	606.1	602.3	598.4
120°	665.8	676.4	665.8	665.8	661.5
122.5°	723.6	737.1	730.3	726.5	723.6
125°	784.3	796.3	792.4	788.1	786.7
127.5°	843.4	858.4	853.1	847.3	843.4
130°	898.9	916.2	913.7	910.9	905.5
132.5°	961.0	974.4	975.4	968.7	964.8
135°	1014.4	1029.3	1032.2	1030.8	1026.9
137.5°	1074.1	1086.1	1088.5	1087.5	1081.8
140°	1126.5	1138.6	1145.3	1145.3	1140.0
142.5°	1180.4	1192.6	1196.4	1197.8	1192.6
145°	1231.5	1241.1	1248.8	1250.3	1245.0
147.5°	1277.3	1289.3	1295.1	1297.5	1292.1
150°	1324.4	1332.6	1337.9	1342.2	1337.9
152.5°	1366.3	1374.5	1381.2	1386.5	1381.2
155°	1408.2	1412.0	1416.3	1423.1	1418.8
157.5°	1444.3	1447.1	1449.6	1459.3	1452.5
160°	1476.5	1479.5	1480.9	1489.0	1483.3
162.5°	1506.4	1506.4	1507.8	1517.0	1510.3
165°	1532.0	1530.5	1530.5	1540.1	1533.4
167.5°	1555.0	1550.6	1550.6	1560.3	1553.6
170°	1572.4	1568.5	1567.1	1576.7	1568.5
172.5°	1584.4	1580.5	1579.1	1588.7	1580.5
175°	1594.1	1590.1	1587.3	1596.9	1588.7
177.5°	1599.3	1595.5	1592.6	1600.7	1592.6
180°	1596.9	1596.9	1596.9	1596.9	1596.9



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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	10.32	11.15	11.30	12.13	13.42	6.30	7.12	7.27	8.10	9.39
	3H	11.99	12.73	12.97	13.72	15.03	7.48	8.22	8.47	9.21	10.52
	4H	12.59	13.29	13.59	14.28	15.60	7.93	8.62	8.93	9.62	10.94
	6H	13.01	13.65	14.01	14.65	15.98	8.24	8.88	9.25	9.88	11.21
	8H	13.13	13.74	14.14	14.75	16.08	8.33	8.94	9.35	9.96	11.28
	12H	13.19	13.77	14.20	14.77	16.12	8.37	8.95	9.39	9.96	11.31
4H	2H	10.34	11.04	11.34	12.03	13.35	6.89	7.59	7.89	8.58	9.90
	3H	12.16	12.74	13.17	13.76	15.09	8.23	8.81	9.24	9.83	11.17
	4H	12.84	13.37	13.86	14.39	15.74	8.78	9.30	9.79	10.32	11.67
	6H	13.35	13.80	14.38	14.84	16.19	9.19	9.64	10.22	10.68	12.03
	8H	13.52	13.94	14.55	14.97	16.34	9.31	9.74	10.34	10.77	12.13
	12H	13.61	13.99	14.66	15.04	16.41	9.37	9.76	10.42	10.80	12.17
8H	4H	12.81	13.23	13.84	14.26	15.63	9.05	9.47	10.08	10.51	11.87
	6H	13.36	13.71	14.42	14.79	16.15	9.56	9.91	10.61	10.98	12.35
	8H	13.57	13.88	14.64	14.94	16.32	9.75	10.05	10.81	11.11	12.49
	12H	13.71	13.98	14.77	15.03	16.46	9.86	10.13	10.92	11.18	12.61
12H	4H	12.76	13.14	13.81	14.19	15.56	9.05	9.43	10.10	10.48	11.85
	6H	13.34	13.65	14.40	14.71	16.09	9.61	9.91	10.67	10.97	12.36
	8H	13.55	13.82	14.62	14.88	16.30	9.81	10.08	10.88	11.13	12.56