

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: P909782

Luminaire Tested: DFN2DIP-TR2F0-050D030US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909782
REPORT IS A COMBINATION OF REPORTS P900238 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-050D030US840-RLLFLL
Description: 2 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

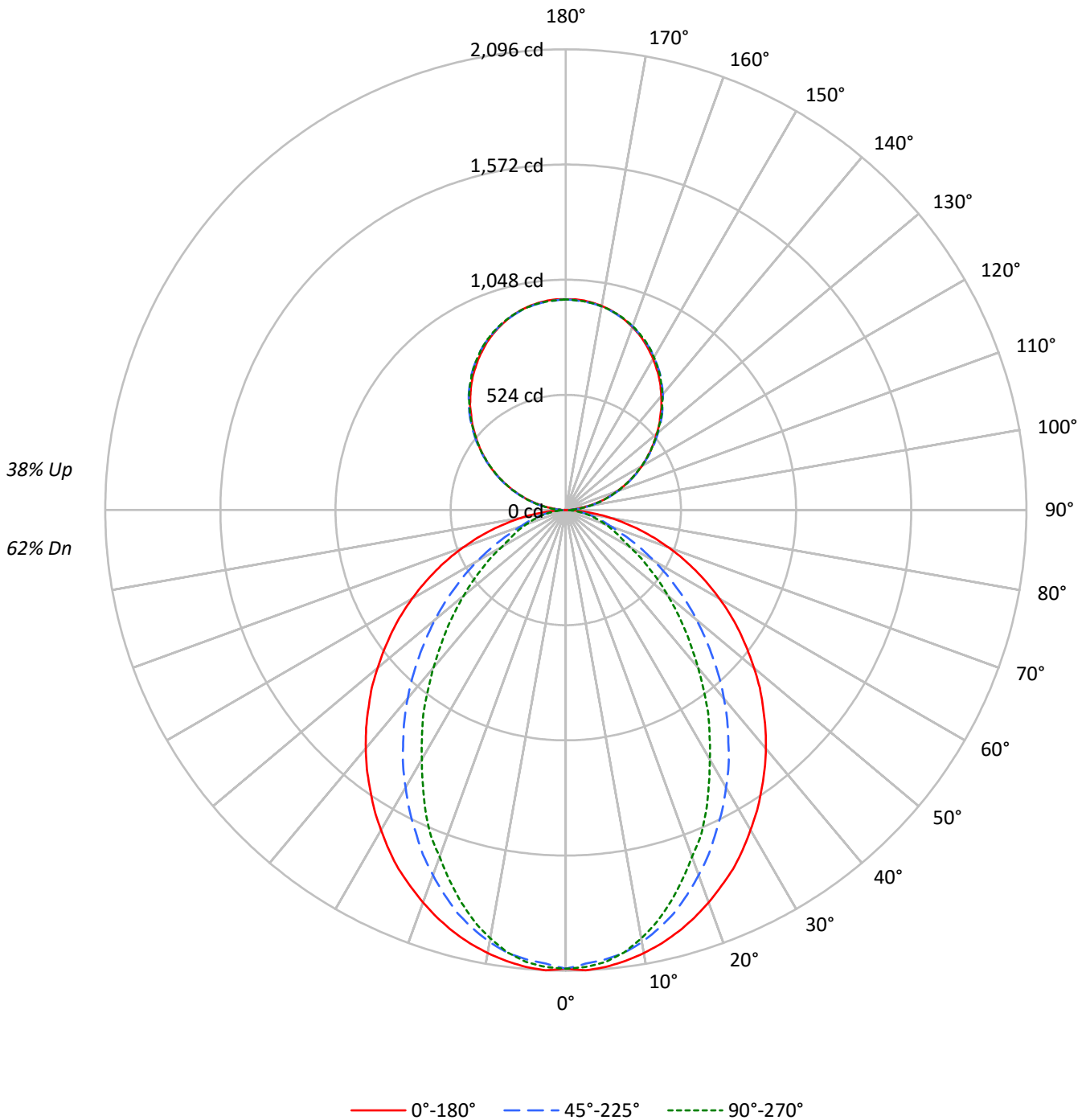
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6973.2 lumens
Efficiency: N/A
Efficacy: 100.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 69.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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		0
RCR																			
0	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67		62
1	101	97	93	90	94	91	88	85	80	77	75	69	68	66	60	59	58		53
2	92	85	79	74	86	80	75	70	71	67	63	62	59	56	53	51	49		45
3	85	75	68	63	79	71	65	60	63	58	54	55	51	48	48	45	43		39
4	78	67	60	54	73	63	57	51	56	51	46	49	45	42	43	40	37		34
5	72	60	52	46	67	57	50	44	51	45	41	45	40	37	39	36	33		30
6	66	54	46	41	62	51	44	39	46	40	36	41	36	32	36	32	29		27
7	62	49	42	36	58	47	40	35	42	36	32	37	33	29	33	29	26		24
8	57	45	37	32	54	43	36	31	38	33	28	34	30	26	30	27	24		22
9	53	41	34	29	50	39	32	28	35	30	26	32	27	24	28	24	22		20
10	50	38	31	26	47	36	30	25	33	27	23	29	25	22	26	22	20		18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4655	4655	4655
5°	4655	4571	4602
10°	4602	4470	4444
15°	4532	4313	4206
20°	4441	4099	3915
25°	4348	3862	3635
30°	4226	3620	3283
35°	4105	3361	2973
40°	3982	3093	2620
45°	3841	2798	2300
50°	3693	2501	1988
55°	3538	2185	1689
60°	3359	1856	1383
65°	3153	1523	1236
70°	2902	1213	1107
75°	2586	1049	991
80°	2131	852	836
85°	1400	529	589

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3841 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.6	2.8
10°-20°	536.9	7.7
20°-30°	753.8	10.8
30°-40°	821.7	11.8
40°-50°	755.2	10.8
50°-60°	593.1	8.5
60°-70°	386.1	5.5
70°-80°	198.7	2.9
80°-90°	53.5	0.8
90°-100°	59.3	0.9
100°-110°	188.4	2.7
110°-120°	322.4	4.6
120°-130°	424.0	6.1
130°-140°	475.9	6.8
140°-150°	466.7	6.7
150°-160°	391.5	5.6
160°-170°	259.6	3.7
170°-180°	90.7	1.3
0°-30°	1486.3	21.3
0°-40°	2308.0	33.1
0°-60°	3656.4	52.4
0°-90°	4294.7	61.6
90°-120°	570.1	8.2
90°-150°	1936.6	27.8
90°-180°	2678.0	38.4
0°-180°	6973.2	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	10	28	27	28	7
95°	42	50	52	52	50	47
105°	174	176	178	179	179	184
115°	324	328	327	326	324	320
125°	471	478	475	473	472	420
135°	609	618	619	618	616	470
145°	739	745	749	750	747	462
155°	845	847	850	854	851	389
165°	919	918	918	924	920	259
175°	956	954	952	958	953	91
180°	958	958	958	958	958	



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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°	0.9	10.4	28.3	26.6	27.5
92.5°	17.9	24.2	25.1	26.0	26.0
95°	42.2	50.3	51.7	51.7	50.3
97.5°	70.2	77.7	80.9	80.9	80.9
100°	102.5	109.2	111.5	111.5	110.7
102.5°	136.6	141.6	144.7	145.6	144.7
105°	173.9	176.2	177.9	179.4	179.4
107.5°	210.9	214.3	214.3	214.9	210.9
110°	246.7	251.4	251.4	251.4	249.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	285.4	290.3	289.4	287.1	285.4
115°	323.6	328.1	326.7	325.9	323.6
117.5°	361.3	367.7	363.7	361.3	359.0
120°	399.5	405.9	399.5	399.5	396.9
122.5°	434.1	442.2	438.2	435.9	434.1
125°	470.6	477.8	475.4	472.8	472.0
127.5°	506.0	515.0	511.9	508.4	506.0
130°	539.3	549.7	548.3	546.5	543.3
132.5°	576.5	584.6	585.2	581.2	578.9
135°	608.6	617.5	619.4	618.4	616.1
137.5°	644.4	651.7	653.1	652.6	649.0
140°	675.9	683.2	687.2	687.2	684.0
142.5°	708.3	715.5	717.8	718.7	715.5
145°	738.9	744.7	749.3	750.1	747.0
147.5°	766.4	773.6	777.0	778.5	775.3
150°	794.7	799.6	802.7	805.4	802.7
152.5°	819.8	824.7	828.7	831.9	828.7
155°	845.0	847.2	849.8	853.8	851.3
157.5°	866.6	868.3	869.8	875.6	871.5
160°	886.0	887.7	888.6	893.4	890.0
162.5°	903.8	903.8	904.7	910.2	906.2
165°	919.2	918.3	918.3	924.0	920.0
167.5°	933.0	930.4	930.4	936.1	932.1
170°	943.4	941.1	940.3	946.0	941.1
172.5°	950.6	948.4	947.5	953.2	948.4
175°	956.4	954.1	952.4	958.2	953.2
177.5°	959.6	957.3	955.5	960.5	955.5
180°	958.2	958.2	958.2	958.2	958.2



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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	13.38	14.31	14.24	15.19	16.29	9.36	10.30	10.22	11.17	12.27
	3H	15.04	15.88	15.91	16.76	17.89	10.54	11.38	11.41	12.26	13.39
	4H	15.64	16.43	16.53	17.32	18.45	10.99	11.77	11.87	12.66	13.80
	6H	16.05	16.77	16.94	17.67	18.82	11.30	12.02	12.20	12.92	14.07
	8H	16.16	16.86	17.07	17.77	18.92	11.38	12.08	12.29	12.99	14.14
	12H	16.22	16.88	17.13	17.79	18.96	11.42	12.08	12.34	12.99	14.16
4H	2H	13.41	14.20	14.30	15.09	16.22	9.96	10.74	10.85	11.63	12.77
	3H	15.22	15.87	16.12	16.80	17.95	11.30	11.95	12.20	12.87	14.02
	4H	15.90	16.49	16.81	17.41	18.59	11.83	12.43	12.75	13.35	14.53
	6H	16.39	16.91	17.32	17.85	19.03	12.24	12.76	13.17	13.70	14.88
	8H	16.56	17.04	17.49	17.97	19.16	12.36	12.84	13.29	13.78	14.97
	12H	16.65	17.08	17.59	18.03	19.23	12.43	12.86	13.37	13.81	15.01
8H	4H	15.87	16.35	16.80	17.28	18.47	12.11	12.59	13.04	13.52	14.72
	6H	16.41	16.81	17.37	17.79	18.98	12.61	13.01	13.56	13.98	15.17
	8H	16.61	16.96	17.58	17.93	19.14	12.79	13.14	13.75	14.11	15.31
	12H	16.74	17.05	17.71	18.01	19.27	12.90	13.21	13.87	14.17	15.42
12H	4H	15.82	16.25	16.77	17.21	18.40	12.11	12.55	13.06	13.50	14.70
	6H	16.39	16.74	17.35	17.70	18.91	12.65	13.00	13.62	13.97	15.18
	8H	16.59	16.90	17.56	17.86	19.12	12.85	13.16	13.82	14.12	15.38