

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: P909802

Luminaire Tested: DFN2DIP-TR2F0-060D030US840-RLFL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909802
REPORT IS A COMBINATION OF REPORTS P900240 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-060D030US840-RLLFLL
Description: 2 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

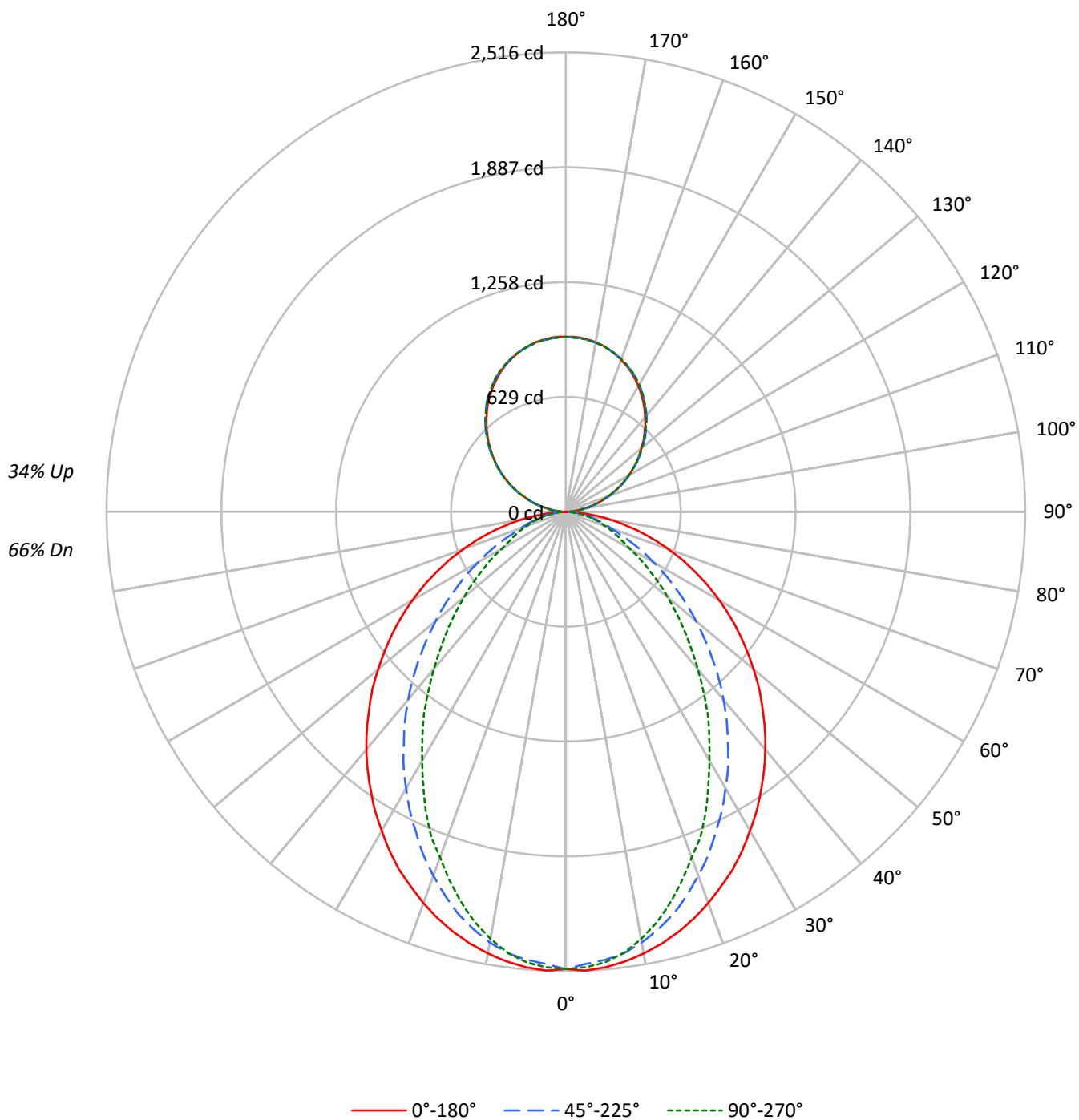
Lumens per Lamp: N/A
Luminaire Lumens: 7831.5 lumens
Efficiency: N/A
Efficacy: 96.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 81.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71
1	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5586	5586	5586
5°	5586	5484	5522
10°	5523	5365	5333
15°	5438	5175	5047
20°	5329	4919	4698
25°	5218	4635	4362
30°	5071	4344	3939
35°	4927	4033	3568
40°	4779	3712	3144
45°	4609	3358	2760
50°	4432	3001	2386
55°	4246	2622	2026
60°	4031	2228	1659
65°	3783	1828	1483
70°	3482	1456	1329
75°	3103	1259	1190
80°	2557	1022	1003
85°	1679	633	706

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4609 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	234.7	3.0
10°-20°	644.3	8.2
20°-30°	904.6	11.6
30°-40°	986.1	12.6
40°-50°	906.3	11.6
50°-60°	711.7	9.1
60°-70°	463.3	5.9
70°-80°	238.5	3.0
80°-90°	63.6	0.8
90°-100°	59.3	0.8
100°-110°	188.4	2.4
110°-120°	322.4	4.1
120°-130°	424.0	5.4
130°-140°	475.9	6.1
140°-150°	466.7	6.0
150°-160°	391.5	5.0
160°-170°	259.6	3.3
170°-180°	90.7	1.2
0°-30°	1783.6	22.8
0°-40°	2769.6	35.4
0°-60°	4387.7	56.0
0°-90°	5153.0	65.8
90°-120°	570.1	7.3
90°-150°	1936.6	24.7
90°-180°	2678.0	34.2
0°-180°	7831.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2504	2504	2504	2504	2504	
5°	2504	2493	2463	2484	2477	237
15°	2382	2357	2280	2237	2214	671
25°	2162	2090	1940	1847	1813	994
35°	1863	1747	1548	1405	1355	1166
45°	1523	1371	1133	972	918	1176
55°	1158	981	736	601	558	1035
65°	782	598	394	317	310	775
75°	417	258	181	165	163	441
85°	97	50	43	43	43	112
90°	1	10	28	27	28	8
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°	2504.3	2504.3	2504.3	2504.3	2504.3
2.5°	2515.6	2504.3	2479.2	2502.0	2497.5
5°	2504.3	2493.0	2463.4	2483.9	2477.1
7.5°	2483.9	2470.3	2438.6	2447.5	2436.2
10°	2456.6	2440.7	2395.6	2388.6	2375.1
12.5°	2422.8	2402.3	2341.0	2327.5	2302.5
15°	2381.9	2356.8	2279.9	2236.9	2214.2
17.5°	2334.3	2297.9	2202.7	2152.9	2116.7
20°	2279.9	2234.4	2121.2	2064.7	2014.7
22.5°	2221.0	2168.8	2037.3	1960.4	1926.4
25°	2162.1	2089.5	1940.0	1847.1	1813.0
27.5°	2091.9	2014.7	1849.3	1742.7	1690.6
30°	2017.1	1930.8	1749.5	1634.1	1572.8
32.5°	1944.5	1840.2	1654.6	1518.4	1461.7
35°	1863.0	1747.4	1548.0	1405.1	1355.1
37.5°	1783.6	1658.8	1448.2	1291.7	1235.2
40°	1699.7	1563.9	1343.8	1183.0	1124.1
42.5°	1613.7	1468.6	1239.7	1071.9	1015.4
45°	1523.0	1371.0	1133.3	972.1	917.8
47.5°	1436.9	1276.1	1031.3	870.2	820.4
50°	1341.7	1180.8	931.5	775.0	727.6
52.5°	1248.6	1078.6	836.3	686.7	643.7
55°	1158.0	981.3	736.5	600.7	557.5
57.5°	1065.2	883.8	648.2	521.3	484.9
60°	970.0	788.7	555.2	439.8	403.4
62.5°	877.2	695.9	475.8	367.2	349.1
65°	781.9	598.2	394.4	317.4	310.4
67.5°	691.3	507.6	317.4	278.7	272.0
70°	596.0	419.3	262.8	240.2	231.1
72.5°	505.4	337.6	219.7	201.8	197.1
75°	417.0	258.2	181.3	165.4	163.3
77.5°	328.7	183.5	142.8	133.7	129.2
80°	246.9	131.5	108.7	99.8	99.8
82.5°	172.2	88.5	74.7	70.2	70.2
85°	97.4	49.8	43.0	43.0	43.0
87.5°	36.4	18.1	18.1	15.9	15.9
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	14.35	15.33	15.17	16.17	17.20	10.34	11.32	11.15	12.15	13.18
	3H	16.02	16.90	16.85	17.74	18.80	11.52	12.40	12.35	13.24	14.30
	4H	16.62	17.44	17.47	18.29	19.36	11.97	12.79	12.81	13.64	14.71
	6H	17.03	17.79	17.89	18.65	19.73	12.28	13.04	13.14	13.90	14.98
	8H	17.15	17.87	18.02	18.75	19.83	12.37	13.09	13.24	13.97	15.05
	12H	17.21	17.89	18.08	18.76	19.87	12.41	13.10	13.28	13.97	15.08
4H	2H	14.39	15.21	15.24	16.06	17.13	10.94	11.76	11.79	12.61	13.68
	3H	16.20	16.89	17.06	17.77	18.86	12.28	12.97	13.14	13.85	14.93
	4H	16.88	17.51	17.76	18.39	19.50	12.82	13.45	13.70	14.33	15.44
	6H	17.38	17.92	18.27	18.82	19.94	13.23	13.77	14.12	14.67	15.79
	8H	17.55	18.05	18.44	18.95	20.08	13.36	13.86	14.25	14.76	15.88
	12H	17.64	18.09	18.55	19.01	20.14	13.42	13.87	14.33	14.79	15.92
8H	4H	16.86	17.36	17.75	18.26	19.38	13.10	13.60	13.99	14.50	15.63
	6H	17.40	17.82	18.32	18.76	19.88	13.60	14.02	14.52	14.96	16.08
	8H	17.60	17.97	18.53	18.91	20.05	13.78	14.15	14.71	15.08	16.22
	12H	17.73	18.06	18.66	18.98	20.18	13.89	14.22	14.82	15.14	16.34
12H	4H	16.82	17.27	17.73	18.18	19.32	13.11	13.56	14.02	14.48	15.61
	6H	17.38	17.74	18.31	18.68	19.82	13.64	14.01	14.57	14.95	16.09
	8H	17.59	17.91	18.52	18.84	20.03	13.85	14.17	14.78	15.10	16.29