

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: P907377

Luminaire Tested: DFN2DIP-TR4F0-060D120US835-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907377
REPORT IS A COMBINATION OF REPORTS P902038 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-060D120US835-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

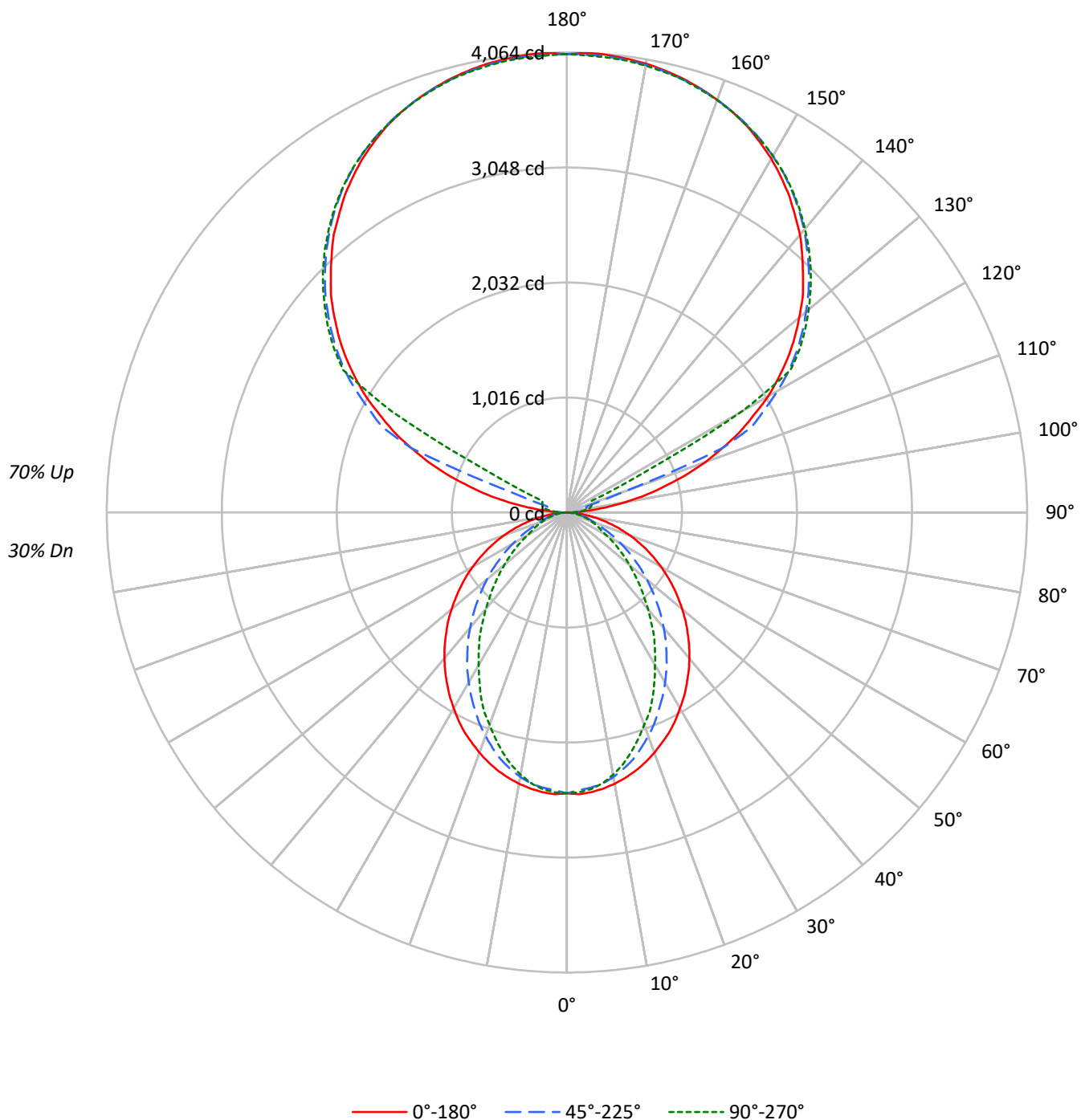
Lumens per Lamp: N/A
Luminaire Lumens: 16980.0 lumens
Efficiency: N/A
Efficacy: 117.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 144.7
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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38
1	94	90	86	83	84	81	77	75	64	62	60	48	47	46	34	33	32
2	85	78	73	68	76	71	66	62	56	53	50	43	40	39	30	29	28
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	25	24
4	71	61	54	48	64	55	49	44	44	40	36	34	31	28	24	22	21
5	66	55	47	41	59	49	43	38	40	35	31	30	27	25	22	20	18
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16
7	56	44	37	31	50	40	34	29	32	28	24	25	22	19	18	16	15
8	52	40	33	28	46	36	30	25	29	25	21	23	20	17	17	15	13
9	48	37	29	25	43	33	27	23	27	22	19	21	18	15	16	13	12
10	45	33	27	22	40	30	24	20	25	20	17	20	16	14	14	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1970	1970	1970
5°	1973	1939	1951
10°	1954	1901	1888
15°	1927	1838	1789
20°	1891	1751	1669
25°	1855	1654	1553
30°	1806	1555	1405
35°	1758	1448	1275
40°	1709	1337	1127
45°	1653	1214	992
50°	1594	1090	861
55°	1533	957	734
60°	1462	819	604
65°	1381	678	544
70°	1282	547	492
75°	1158	482	448
80°	978	404	388
85°	682	270	291

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2150 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	232.4	1.4
10°-20°	638.0	3.8
20°-30°	895.7	5.3
30°-40°	976.4	5.8
40°-50°	897.4	5.3
50°-60°	704.8	4.2
60°-70°	458.8	2.7
70°-80°	236.1	1.4
80°-90°	67.4	0.4
90°-100°	133.5	0.8
100°-110°	497.8	2.9
110°-120°	1320.3	7.8
120°-130°	2189.8	12.9
130°-140°	2326.1	13.7
140°-150°	2161.8	12.7
150°-160°	1738.1	10.2
160°-170°	1119.9	6.6
170°-180°	385.5	2.3
0°-30°	1766.2	10.4
0°-40°	2742.6	16.2
0°-60°	4344.8	25.6
0°-90°	5107.1	30.1
90°-120°	1951.7	11.5
90°-150°	8629.4	50.8
90°-180°	11873.0	69.9
0°-180°	16980.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2480	2480	2480	2480	2480	
5°	2480	2469	2439	2460	2453	235
15°	2359	2334	2258	2215	2193	665
25°	2141	2069	1921	1829	1795	985
35°	1845	1730	1533	1391	1342	1155
45°	1508	1358	1122	963	909	1165
55°	1147	972	729	595	552	1025
65°	774	592	390	314	307	768
75°	413	256	180	164	162	437
85°	96	49	43	43	43	111
90°	3	35	58	73	79	16
95°	190	94	114	129	126	225
105°	891	979	179	211	223	952
115°	1685	1735	1808	451	240	1659
125°	2382	2421	2476	2497	2506	2125
135°	2948	2995	3021	3051	3045	2277
145°	3420	3417	3467	3487	3472	2139
155°	3766	3739	3775	3792	3769	1735
165°	3968	3950	3959	3980	3959	1121
175°	4058	4038	4044	4064	4035	386
180°	4050	4050	4050	4050	4050	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2479.8	2479.8	2479.8	2479.8	2479.8
2.5°	2491.0	2479.8	2455.0	2477.6	2473.1
5°	2479.8	2468.6	2439.3	2459.6	2452.9
7.5°	2459.6	2446.2	2414.8	2423.6	2412.4
10°	2432.6	2416.9	2372.2	2365.3	2351.9
12.5°	2399.1	2378.8	2318.1	2304.8	2280.0
15°	2358.6	2333.8	2257.6	2215.0	2192.6
17.5°	2311.5	2275.5	2181.2	2131.9	2096.0
20°	2257.6	2212.6	2100.5	2044.5	1995.0
22.5°	2199.3	2147.6	2017.4	1941.2	1907.6
25°	2141.0	2069.1	1921.0	1829.1	1795.3
27.5°	2071.5	1995.0	1831.2	1725.7	1674.1
30°	1997.4	1911.9	1732.4	1618.1	1557.4
32.5°	1925.5	1822.2	1638.4	1503.6	1447.4
35°	1844.8	1730.3	1532.9	1391.4	1341.9
37.5°	1766.2	1642.6	1434.1	1279.1	1223.1
40°	1683.1	1548.6	1330.7	1171.4	1113.1
42.5°	1597.9	1454.3	1227.6	1061.4	1005.5
45°	1508.1	1357.6	1122.2	962.6	908.8
47.5°	1422.9	1263.6	1021.2	861.7	812.4
50°	1328.6	1169.3	922.4	767.4	720.5
52.5°	1236.4	1068.1	828.1	680.0	637.4
55°	1146.7	971.7	729.3	594.8	552.1
57.5°	1054.8	875.2	641.9	516.2	480.2
60°	960.5	781.0	549.8	435.5	399.5
62.5°	868.6	689.1	471.2	363.6	345.7
65°	774.3	592.4	390.5	314.3	307.4
67.5°	684.5	502.6	314.3	276.0	269.3
70°	590.2	415.2	260.2	237.9	228.8
72.5°	500.5	334.3	217.6	199.8	195.2
75°	412.9	255.7	179.5	163.8	161.7
77.5°	325.5	181.7	141.4	132.4	127.9
80°	244.5	130.2	107.6	98.8	98.8
82.5°	170.5	87.6	74.0	69.5	69.5
85°	96.4	49.3	42.6	42.6	42.6
87.5°	36.0	17.9	17.9	15.7	15.7
90°	2.8	35.1	58.5	73.4	79.0
92.5°	73.4	61.6	70.3	76.2	79.0
95°	190.3	93.6	114.1	129.1	126.0
97.5°	342.8	102.7	149.3	158.3	161.1
100°	518.8	117.3	167.0	190.3	196.3
102.5°	712.0	706.4	172.9	205.0	214.0
105°	890.8	978.9	178.9	210.9	222.7
107.5°	1098.9	1172.0	184.8	216.8	228.6
110°	1298.3	1359.6	512.9	219.9	231.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1485.9	1538.4	1488.7	225.5	234.5
115°	1684.9	1734.7	1808.1	451.3	240.5
117.5°	1857.9	1916.4	1966.5	1547.1	779.5
120°	2051.4	2095.2	2148.1	2183.3	1787.6
122.5°	2215.3	2262.3	2321.1	2338.5	2341.6
125°	2382.3	2420.6	2476.3	2496.8	2505.5
127.5°	2534.7	2575.8	2620.0	2649.2	2652.0
130°	2678.4	2725.4	2757.4	2789.8	2787.0
132.5°	2824.9	2863.2	2895.2	2921.7	2918.9
135°	2948.1	2995.1	3021.2	3050.8	3044.9
137.5°	3076.9	3112.0	3141.6	3170.8	3162.1
140°	3202.9	3226.5	3258.5	3285.0	3270.4
142.5°	3308.6	3329.2	3367.1	3390.4	3375.8
145°	3420.0	3416.9	3466.6	3487.2	3472.5
147.5°	3516.4	3507.7	3557.5	3572.1	3560.6
150°	3610.3	3589.8	3636.8	3654.2	3639.6
152.5°	3689.3	3666.0	3709.9	3727.6	3707.1
155°	3765.5	3739.4	3774.6	3792.0	3768.7
157.5°	3827.1	3803.8	3830.3	3850.8	3827.1
160°	3880.0	3862.3	3880.0	3897.4	3876.9
162.5°	3926.7	3909.3	3923.9	3944.4	3918.0
165°	3967.7	3950.3	3959.0	3979.6	3959.0
167.5°	4000.1	3982.3	3991.4	4011.9	3985.5
170°	4026.5	4008.8	4014.7	4035.2	4008.8
172.5°	4043.9	4026.5	4032.5	4053.0	4026.5
175°	4058.5	4038.0	4043.9	4064.5	4035.2
177.5°	4064.5	4043.9	4047.1	4067.6	4041.2
180°	4049.9	4049.9	4049.9	4049.9	4049.9

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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	7.28	7.97	8.39	9.07	10.61	3.25	3.94	4.37	5.05	6.58
	3H	8.94	9.56	10.07	10.68	12.22	4.43	5.05	5.55	6.16	7.71
	4H	9.54	10.13	10.68	11.25	12.80	4.87	5.46	6.01	6.58	8.13
	6H	9.96	10.50	11.10	11.62	13.18	5.19	5.73	6.33	6.85	8.41
	8H	10.08	10.59	11.23	11.73	13.29	5.28	5.79	6.42	6.92	8.48
	12H	10.14	10.62	11.29	11.75	13.33	5.31	5.80	6.46	6.93	8.51
4H	2H	7.28	7.86	8.42	8.98	10.53	3.83	4.41	4.97	5.53	7.08
	3H	9.09	9.58	10.24	10.72	12.29	5.17	5.65	6.31	6.80	8.36
	4H	9.78	10.23	10.93	11.36	12.94	5.71	6.16	6.86	7.29	8.87
	6H	10.29	10.67	11.44	11.82	13.40	6.12	6.51	7.28	7.66	9.24
	8H	10.46	10.82	11.61	11.96	13.56	6.25	6.61	7.40	7.75	9.34
	12H	10.55	10.87	11.72	12.03	13.63	6.31	6.63	7.48	7.79	9.39
8H	4H	9.74	10.10	10.89	11.24	12.83	5.98	6.34	7.13	7.48	9.08
	6H	10.30	10.59	11.47	11.78	13.37	6.49	6.79	7.67	7.98	9.57
	8H	10.51	10.77	11.69	11.94	13.55	6.68	6.94	7.86	8.11	9.72
	12H	10.65	10.87	11.83	12.04	13.68	6.80	7.02	7.98	8.19	9.83
12H	4H	9.68	10.01	10.85	11.16	12.76	5.98	6.30	7.15	7.46	9.06
	6H	10.27	10.53	11.45	11.70	13.31	6.54	6.80	7.72	7.97	9.58
	8H	10.49	10.71	11.67	11.88	13.52	6.75	6.97	7.93	8.14	9.78

END OF REPORT