

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: P927626

Luminaire Tested: DFN2DIP-HX4F0-060D120US840-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927626
REPORT IS A COMBINATION OF REPORTS P900968 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-060D120US840-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

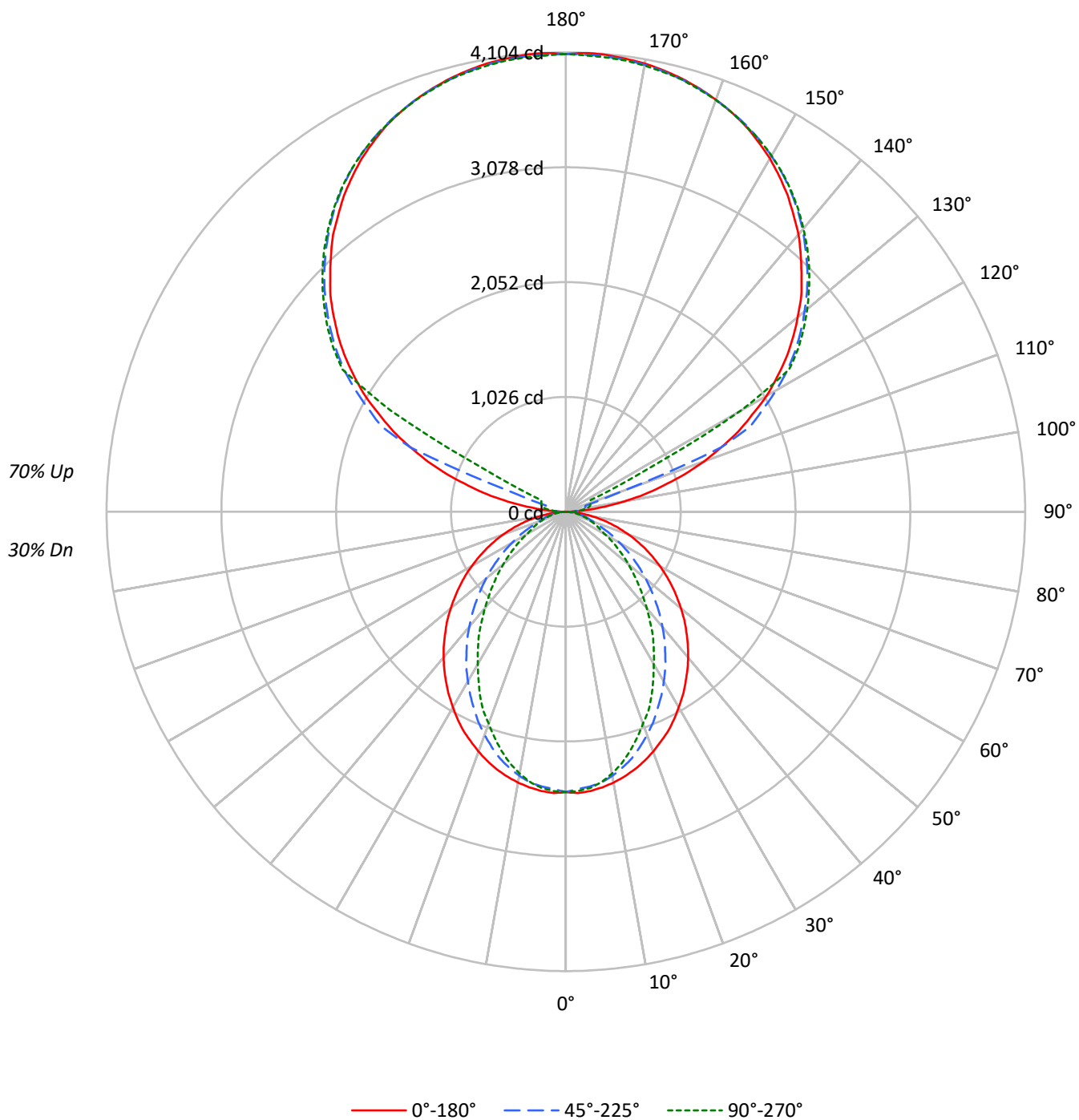
Lumens per Lamp: N/A
Luminaire Lumens: 17146.4 lumens
Efficiency: N/A
Efficacy: 114.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 150.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
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°	1862	1862	1862
5°	1865	1833	1844
10°	1847	1797	1784
15°	1821	1738	1692
20°	1788	1656	1578
25°	1754	1564	1468
30°	1708	1470	1329
35°	1663	1369	1206
40°	1617	1265	1066
45°	1563	1149	939
50°	1508	1032	814
55°	1450	906	695
60°	1384	776	572
65°	1307	642	515
70°	1214	518	466
75°	1098	457	424
80°	928	384	368
85°	649	257	277

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2101 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	234.7	1.4
10°-20°	644.3	3.8
20°-30°	904.5	5.3
30°-40°	986.0	5.8
40°-50°	906.2	5.3
50°-60°	711.7	4.2
60°-70°	463.3	2.7
70°-80°	238.5	1.4
80°-90°	68.1	0.4
90°-100°	134.8	0.8
100°-110°	502.7	2.9
110°-120°	1333.2	7.8
120°-130°	2211.3	12.9
130°-140°	2348.9	13.7
140°-150°	2183.0	12.7
150°-160°	1755.1	10.2
160°-170°	1130.9	6.6
170°-180°	389.2	2.3
0°-30°	1783.5	10.4
0°-40°	2769.5	16.2
0°-60°	4387.4	25.6
0°-90°	5157.2	30.1
90°-120°	1970.8	11.5
90°-150°	8714.0	50.8
90°-180°	11989.0	69.9
0°-180°	17146.4	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	2089	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°	3	35	59	74	80	16
95°	192	94	115	130	127	228
105°	900	988	181	213	225	961
115°	1701	1752	1826	456	243	1675
125°	2406	2444	2501	2521	2530	2146
135°	2977	3024	3051	3081	3075	2300
145°	3454	3450	3501	3521	3506	2160
155°	3802	3776	3812	3829	3806	1752
165°	4007	3989	3998	4019	3998	1132
175°	4098	4078	4084	4104	4075	390
180°	4090	4090	4090	4090	4090	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2504.1	2504.1	2504.1	2504.1	2504.1
2.5°	2515.4	2504.1	2479.1	2501.9	2497.3
5°	2504.1	2492.8	2463.2	2483.7	2476.9
7.5°	2483.7	2470.2	2438.5	2447.4	2436.0
10°	2456.4	2440.6	2395.4	2388.5	2374.9
12.5°	2422.6	2402.1	2340.8	2327.4	2302.3
15°	2381.7	2356.7	2279.7	2236.7	2214.1
17.5°	2334.2	2297.8	2202.6	2152.8	2116.5
20°	2279.7	2234.3	2121.1	2064.5	2014.6
22.5°	2220.9	2168.6	2037.2	1960.2	1926.3
25°	2162.0	2089.4	1939.8	1847.0	1812.9
27.5°	2091.8	2014.6	1849.1	1742.6	1690.5
30°	2017.0	1930.6	1749.4	1634.0	1572.7
32.5°	1944.4	1840.1	1654.5	1518.3	1461.6
35°	1862.9	1747.3	1547.9	1405.0	1355.1
37.5°	1783.5	1658.7	1448.2	1291.6	1235.1
40°	1699.6	1563.8	1343.7	1182.9	1124.0
42.5°	1613.6	1468.6	1239.6	1071.8	1015.4
45°	1522.9	1370.9	1133.2	972.0	917.7
47.5°	1436.8	1276.0	1031.2	870.1	820.4
50°	1341.6	1180.8	931.4	774.9	727.6
52.5°	1248.5	1078.6	836.2	686.7	643.6
55°	1157.9	981.2	736.4	600.6	557.5
57.5°	1065.1	883.8	648.2	521.3	484.9
60°	969.9	788.7	555.2	439.8	403.4
62.5°	877.1	695.9	475.8	367.2	349.1
65°	781.9	598.2	394.3	317.4	310.4
67.5°	691.2	507.5	317.4	278.7	271.9
70°	596.0	419.3	262.7	240.2	231.0
72.5°	505.4	337.6	219.7	201.8	197.1
75°	416.9	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°	97.3	49.8	43.0	43.0	43.0
87.5°	36.4	18.1	18.1	15.9	15.9
90°	2.8	35.4	59.1	74.1	79.8
92.5°	74.1	62.2	71.0	76.9	79.8
95°	192.2	94.5	115.2	130.4	127.2
97.5°	346.2	103.7	150.8	159.9	162.7
100°	523.9	118.4	168.6	192.2	198.2
102.5°	719.0	713.3	174.6	207.0	216.1
105°	899.5	988.5	180.7	213.0	224.9
107.5°	1109.7	1183.5	186.6	218.9	230.8
110°	1311.0	1372.9	517.9	222.1	233.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1500.5	1553.5	1503.3	227.7	236.8
115°	1701.4	1751.7	1825.8	455.7	242.9
117.5°	1876.1	1935.2	1985.8	1562.3	787.1
120°	2071.5	2115.7	2169.2	2204.7	1805.1
122.5°	2237.0	2284.5	2343.8	2361.4	2364.5
125°	2405.6	2444.3	2500.6	2521.3	2530.1
127.5°	2559.5	2601.0	2645.7	2675.2	2678.0
130°	2704.6	2752.1	2784.4	2817.1	2814.3
132.5°	2852.6	2891.3	2923.6	2950.3	2947.5
135°	2977.0	3024.5	3050.8	3080.7	3074.7
137.5°	3107.1	3142.5	3172.4	3201.9	3193.1
140°	3234.3	3258.1	3290.4	3317.2	3302.4
142.5°	3341.0	3361.8	3400.1	3423.6	3408.9
145°	3453.5	3450.4	3500.6	3521.4	3506.5
147.5°	3550.9	3542.1	3592.4	3607.1	3595.5
150°	3645.7	3625.0	3672.4	3690.0	3675.3
152.5°	3725.5	3701.9	3746.3	3764.1	3743.4
155°	3802.4	3776.0	3811.6	3829.2	3805.6
157.5°	3864.6	3841.1	3867.8	3888.5	3864.6
160°	3918.0	3900.2	3918.0	3935.6	3914.9
162.5°	3965.2	3947.6	3962.4	3983.1	3956.4
165°	4006.6	3989.0	3997.8	4018.6	3997.8
167.5°	4039.3	4021.3	4030.5	4051.2	4024.6
170°	4066.0	4048.1	4054.0	4074.7	4048.1
172.5°	4083.5	4066.0	4072.0	4092.7	4066.0
175°	4098.3	4077.6	4083.5	4104.3	4074.7
177.5°	4104.3	4083.5	4086.8	4107.5	4080.8
180°	4089.6	4089.6	4089.6	4089.6	4089.6

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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	7.09	7.78	8.20	8.88	10.42	3.06	3.75	4.18	4.86	6.39
	3H	8.75	9.37	9.88	10.49	12.03	4.24	4.86	5.36	5.97	7.52
	4H	9.36	9.94	10.49	11.06	12.61	4.68	5.27	5.82	6.39	7.94
	6H	9.77	10.31	10.91	11.43	12.99	5.00	5.54	6.14	6.66	8.22
	8H	9.89	10.41	11.04	11.54	13.10	5.09	5.60	6.23	6.73	8.29
	12H	9.95	10.44	11.10	11.57	13.15	5.13	5.61	6.28	6.74	8.32
4H	2H	7.09	7.67	8.23	8.79	10.34	3.64	4.22	4.78	5.34	6.89
	3H	8.90	9.39	10.05	10.53	12.10	4.98	5.46	6.12	6.61	8.17
	4H	9.59	10.04	10.74	11.17	12.76	5.52	5.97	6.67	7.10	8.69
	6H	10.10	10.48	11.26	11.64	13.21	5.94	6.32	7.09	7.47	9.05
	8H	10.27	10.63	11.43	11.78	13.37	6.06	6.42	7.22	7.57	9.16
	12H	10.36	10.69	11.53	11.84	13.44	6.12	6.45	7.29	7.60	9.20
8H	4H	9.55	9.91	10.70	11.05	12.65	5.79	6.15	6.95	7.30	8.89
	6H	10.11	10.41	11.29	11.60	13.18	6.31	6.60	7.48	7.79	9.38
	8H	10.33	10.59	11.51	11.75	13.36	6.50	6.76	7.68	7.92	9.53
	12H	10.46	10.69	11.65	11.85	13.50	6.61	6.84	7.80	8.00	9.65
12H	4H	9.50	9.82	10.67	10.98	12.57	5.79	6.11	6.96	7.27	8.87
	6H	10.09	10.34	11.27	11.51	13.12	6.36	6.61	7.54	7.78	9.39
	8H	10.30	10.53	11.49	11.69	13.34	6.56	6.79	7.75	7.95	9.60

END OF REPORT