

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: P909777

Luminaire Tested: DFN2DIP-TR2F0-050D020US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909777
REPORT IS A COMBINATION OF REPORTS P901747 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-050D020US840-FLLONL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

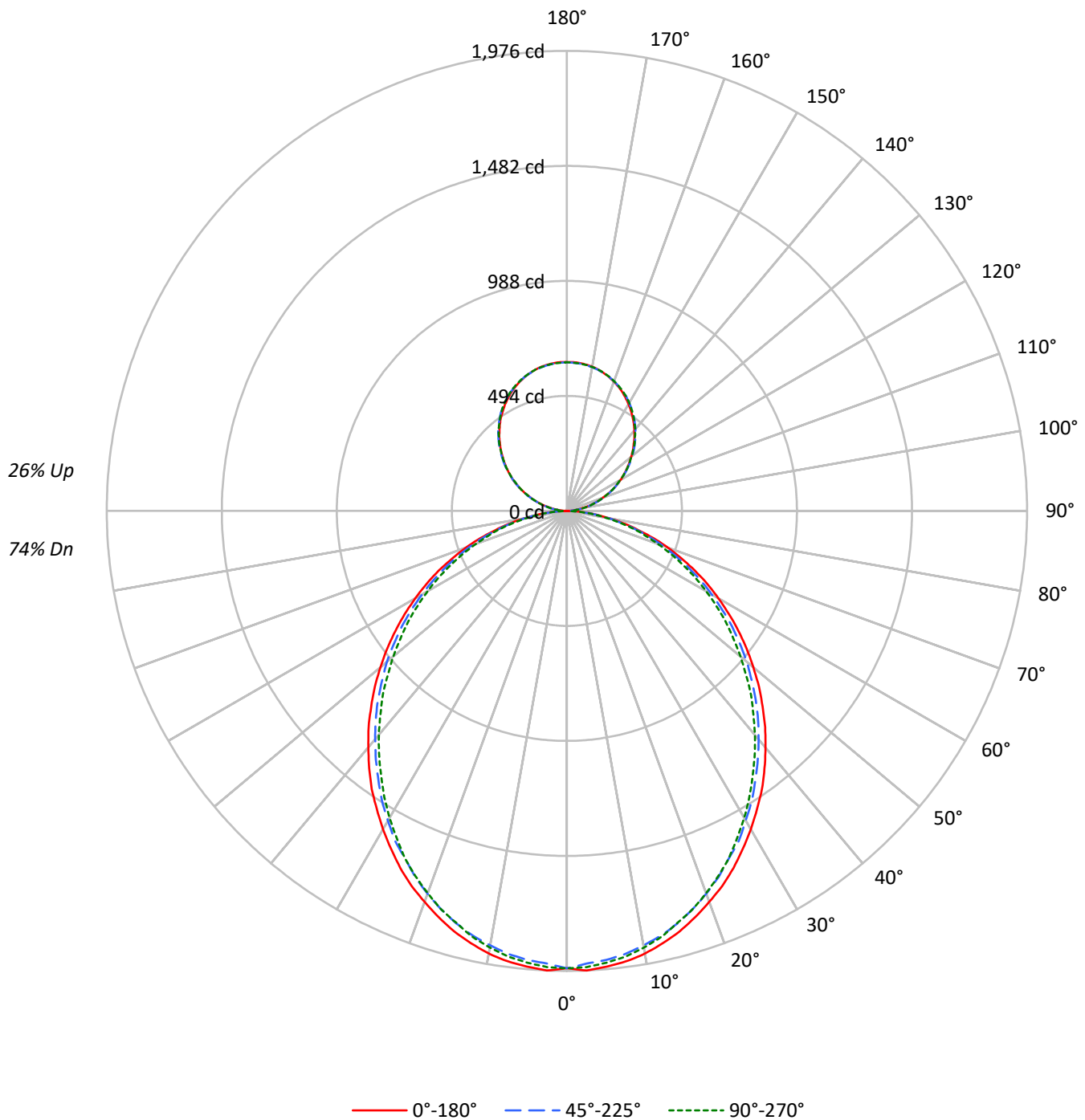
Lumens per Lamp: N/A
Luminaire Lumens: 6786.3 lumens
Efficiency: N/A
Efficacy: 108.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 62.8
Input Voltage (V): 120
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	113	113	113	113	107	107	107	107	96	96	96	87	87	87	78	78	78
1	103	99	95	91	98	94	90	87	85	82	80	77	74	72	69	67	66
2	94	86	80	74	89	82	76	71	74	70	66	67	64	61	61	58	55
3	86	76	68	62	81	72	65	60	66	60	55	59	55	51	54	50	47
4	79	67	59	53	74	64	57	51	58	52	47	53	48	44	48	44	41
5	72	60	52	45	68	57	50	44	52	46	41	48	42	38	43	39	36
6	67	54	46	40	63	52	44	38	47	41	36	43	38	34	39	35	31
7	62	49	41	35	58	47	39	34	43	37	32	39	34	30	36	31	28
8	57	45	37	31	54	43	35	30	39	33	28	36	31	27	33	29	25
9	54	41	33	28	51	39	32	27	36	30	26	33	28	24	31	26	23
10	50	38	30	25	48	36	29	24	33	27	23	31	26	22	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4382	4382	4382
5°	4383	4311	4343
10°	4341	4244	4276
15°	4270	4164	4177
20°	4178	4057	4076
25°	4085	3932	3960
30°	3971	3814	3814
35°	3862	3677	3661
40°	3729	3538	3514
45°	3596	3398	3363
50°	3451	3251	3190
55°	3298	3081	3028
60°	3124	2881	2844
65°	2934	2671	2626
70°	2693	2417	2390
75°	2361	2112	2162
80°	1957	1723	1748
85°	1335	1085	1085

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3596 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.9	2.7
10°-20°	520.3	7.7
20°-30°	764.6	11.3
30°-40°	888.1	13.1
40°-50°	887.0	13.1
50°-60°	773.4	11.4
60°-70°	571.7	8.4
70°-80°	323.5	4.8
80°-90°	87.2	1.3
90°-100°	39.5	0.6
100°-110°	125.6	1.9
110°-120°	214.9	3.2
120°-130°	282.7	4.2
130°-140°	317.3	4.7
140°-150°	311.1	4.6
150°-160°	261.0	3.8
160°-170°	173.1	2.6
170°-180°	60.5	0.9
0°-30°	1469.8	21.7
0°-40°	2357.9	34.7
0°-60°	4018.3	59.2
0°-90°	5000.7	73.7
90°-120°	380.0	5.6
90°-150°	1291.1	19.0
90°-180°	1786.0	26.3
0°-180°	6786.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1965	1965	1965	1965	1965	
5°	1965	1957	1936	1952	1948	187
15°	1870	1859	1834	1842	1833	527
25°	1693	1678	1646	1649	1646	779
35°	1460	1442	1411	1400	1390	912
45°	1188	1175	1147	1126	1118	917
55°	899	888	865	843	833	804
65°	606	595	576	559	550	600
75°	317	314	304	293	297	339
85°	77	76	74	68	66	86
90°	1	7	19	18	18	6
95°	28	34	34	34	34	31
105°	116	117	119	120	120	122
115°	216	219	218	217	216	213
125°	314	318	317	315	315	280
135°	406	412	413	412	411	314
145°	493	496	500	500	498	308
155°	563	565	566	569	568	259
165°	613	612	612	616	613	173
175°	638	636	635	639	636	61
180°	639	639	639	639	639	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1964.7	1964.7	1964.7	1964.7	1964.7
2.5°	1976.1	1966.7	1945.9	1964.7	1961.2
5°	1964.7	1957.3	1936.4	1951.5	1947.9
7.5°	1951.5	1940.3	1919.5	1934.7	1930.9
10°	1930.9	1917.6	1895.0	1910.0	1904.4
12.5°	1902.4	1891.2	1868.6	1877.9	1874.1
15°	1870.3	1859.1	1834.4	1842.1	1832.6
17.5°	1830.6	1819.4	1794.7	1804.1	1794.7
20°	1787.2	1775.9	1749.5	1755.0	1747.7
22.5°	1743.8	1726.8	1702.1	1702.1	1698.3
25°	1692.7	1677.7	1645.6	1649.2	1645.6
27.5°	1636.0	1622.8	1598.3	1592.7	1583.3
30°	1579.4	1564.3	1536.0	1530.4	1522.8
32.5°	1518.9	1507.7	1477.4	1466.0	1458.4
35°	1460.4	1441.6	1411.3	1399.9	1390.5
37.5°	1394.2	1377.3	1347.0	1333.7	1324.3
40°	1326.4	1311.1	1280.8	1263.9	1256.4
42.5°	1260.2	1245.0	1214.9	1195.8	1184.6
45°	1188.4	1175.2	1146.7	1126.1	1118.4
47.5°	1118.4	1105.2	1075.0	1054.1	1042.9
50°	1044.7	1035.3	1008.9	982.4	972.9
52.5°	972.9	959.7	935.2	914.4	901.2
55°	899.4	888.0	865.3	842.6	833.2
57.5°	825.6	816.2	791.5	768.9	761.2
60°	751.8	744.5	718.0	697.1	691.6
62.5°	680.1	666.9	648.0	629.1	621.6
65°	606.5	595.1	576.2	559.3	549.8
67.5°	531.0	521.4	504.5	491.3	483.6
70°	461.0	453.4	436.4	423.1	415.8
72.5°	389.3	381.6	372.2	359.0	353.4
75°	317.3	313.7	304.1	292.9	296.7
77.5°	253.2	245.5	241.8	236.1	230.6
80°	189.0	187.0	183.2	177.6	173.8
82.5°	128.5	128.5	126.6	119.1	119.1
85°	77.4	75.5	73.7	68.0	66.1
87.5°	34.0	30.3	26.5	20.8	18.9
90°	0.6	7.0	18.9	17.7	18.3
92.5°	11.9	16.2	16.8	17.4	17.4
95°	28.1	33.5	34.4	34.4	33.5
97.5°	46.8	51.8	53.9	53.9	53.9
100°	68.4	72.8	74.3	74.3	73.7
102.5°	91.1	94.3	96.4	97.0	96.4
105°	115.9	117.4	118.7	119.6	119.6
107.5°	140.6	142.9	142.9	143.3	140.6
110°	164.5	167.5	167.5	167.5	166.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	190.3	193.5	193.0	191.4	190.3
115°	215.7	218.7	217.8	217.2	215.7
117.5°	241.0	245.2	242.5	241.0	239.3
120°	266.3	270.5	266.3	266.3	264.6
122.5°	289.4	294.8	292.2	290.6	289.4
125°	313.7	318.5	317.0	315.3	314.7
127.5°	337.4	343.4	341.2	338.9	337.4
130°	359.5	366.5	365.5	364.4	362.2
132.5°	384.4	389.8	390.1	387.5	385.9
135°	405.8	411.7	412.8	412.3	410.7
137.5°	429.6	434.4	435.5	435.1	432.7
140°	450.6	455.4	458.2	458.2	456.1
142.5°	472.2	477.0	478.6	479.1	477.0
145°	492.6	496.4	499.6	500.1	498.0
147.5°	510.9	515.7	518.1	519.0	516.8
150°	529.8	533.0	535.1	536.8	535.1
152.5°	546.5	549.8	552.5	554.6	552.5
155°	563.3	564.8	566.5	569.3	567.5
157.5°	577.7	578.9	579.9	583.7	581.0
160°	590.7	591.8	592.4	595.6	593.3
162.5°	602.6	602.6	603.1	606.8	604.1
165°	612.8	612.2	612.2	616.0	613.4
167.5°	622.0	620.3	620.3	624.1	621.5
170°	628.9	627.4	626.8	630.7	627.4
172.5°	633.8	632.2	631.7	635.5	632.2
175°	637.6	636.1	634.9	638.7	635.5
177.5°	639.7	638.2	637.0	640.3	637.0
180°	638.7	638.7	638.7	638.7	638.7

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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	14.22	15.35	14.95	16.09	16.98	13.80	14.92	14.52	15.67	16.56
	3H	15.88	16.89	16.62	17.64	18.56	15.42	16.43	16.16	17.18	18.10
	4H	16.46	17.42	17.22	18.18	19.11	16.00	16.96	16.76	17.72	18.65
	6H	16.86	17.74	17.63	18.51	19.46	16.40	17.28	17.17	18.05	19.00
	8H	16.96	17.80	17.74	18.59	19.54	16.50	17.34	17.28	18.13	19.08
	12H	17.01	17.81	17.79	18.60	19.57	16.55	17.35	17.33	18.13	19.11
4H	2H	14.71	15.66	15.47	16.42	17.36	14.37	15.32	15.13	16.09	17.02
	3H	16.57	17.37	17.34	18.16	19.11	16.19	16.98	16.96	17.78	18.73
	4H	17.28	18.00	18.06	18.80	19.78	16.88	17.61	17.67	18.40	19.38
	6H	17.78	18.41	18.59	19.23	20.22	17.39	18.02	18.19	18.84	19.82
	8H	17.93	18.51	18.74	19.33	20.33	17.53	18.12	18.34	18.94	19.93
	12H	18.00	18.53	18.83	19.37	20.37	17.60	18.13	18.43	18.97	19.97
8H	4H	17.48	18.07	18.29	18.89	19.88	17.13	17.72	17.94	18.54	19.53
	6H	18.10	18.58	18.93	19.44	20.44	17.75	18.23	18.58	19.09	20.09
	8H	18.31	18.74	19.15	19.60	20.61	17.95	18.38	18.80	19.24	20.25
	12H	18.43	18.81	19.28	19.66	20.73	18.06	18.45	18.91	19.29	20.36
12H	4H	17.48	18.01	18.31	18.85	19.85	17.13	17.66	17.96	18.50	19.50
	6H	18.12	18.56	18.97	19.42	20.43	17.78	18.22	18.63	19.07	20.09
	8H	18.36	18.74	19.21	19.59	20.66	18.02	18.40	18.87	19.25	20.32