

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: P923709

Luminaire Tested: DFN2DIP-TR4F0-050D120US940-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923709
REPORT IS A COMBINATION OF REPORTS P902036 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D120US940-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

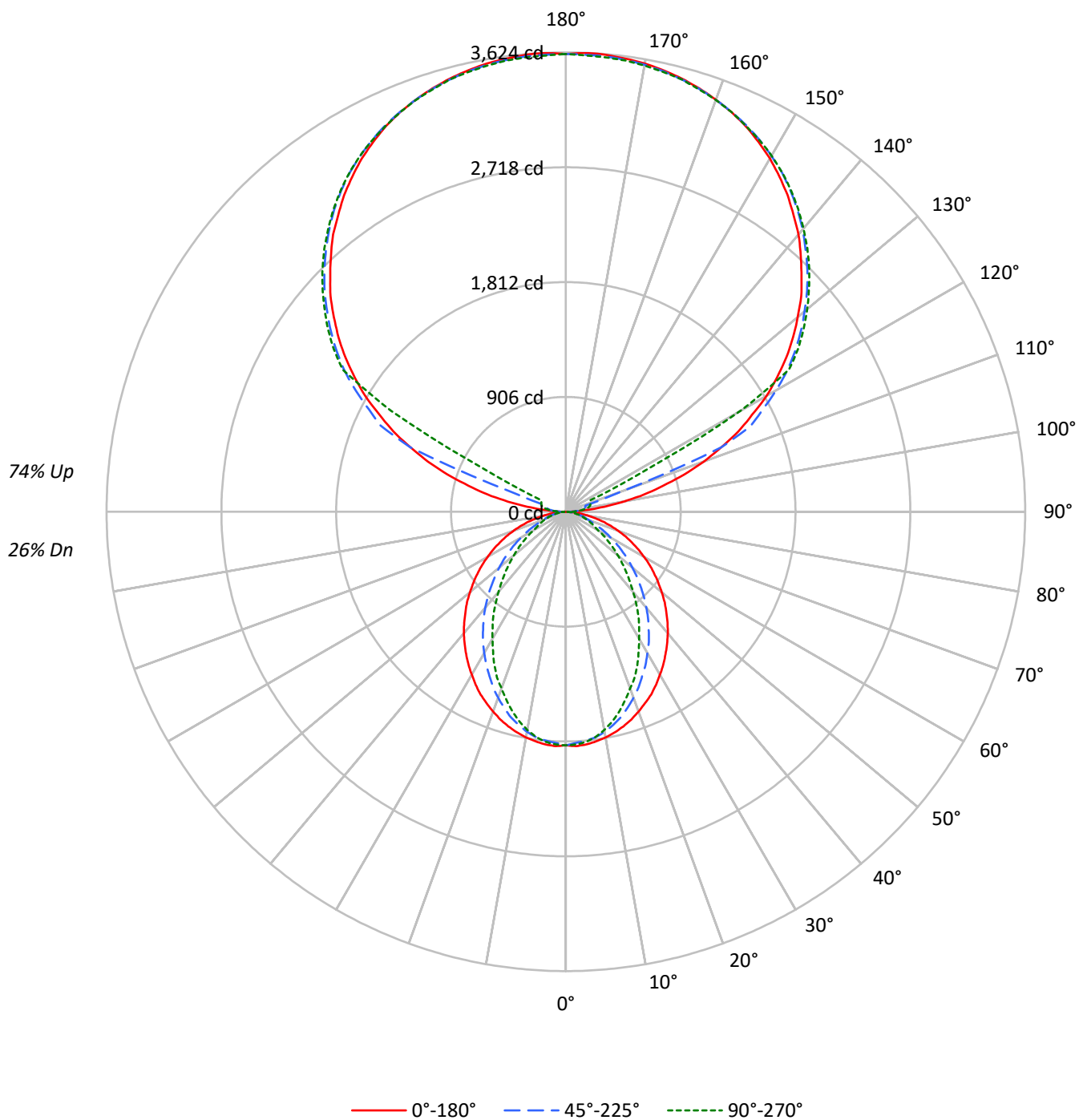
Lumens per Lamp: N/A
Luminaire Lumens: 14383.3 lumens
Efficiency: N/A
Efficacy: 107.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 133.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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		91	91	91	91		70	70	70		52	52	52		34	34	34
1	93	89	85	82		83	79	76	74		62	60	58		46	44	43		31	30	29
2	85	78	72	67		75	70	65	61		54	51	48		40	38	36		27	26	25
3	77	68	62	56		69	61	56	51		48	44	41		36	33	31		24	23	22
4	71	61	53	47		63	54	48	43		43	38	35		32	29	27		22	20	19
5	65	54	46	41		58	49	42	37		38	34	30		29	26	23		20	18	17
6	60	48	41	35		53	44	37	32		35	30	26		26	23	20		18	16	15
7	55	44	36	31		49	39	33	28		31	27	23		24	20	18		17	15	13
8	51	39	32	27		46	36	29	25		28	24	20		22	18	16		15	13	12
9	48	36	29	24		42	33	26	22		26	21	18		20	17	14		14	12	11
10	44	33	26	21		40	30	24	20		24	19	16		18	15	13		13	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1464	1464	1464
5°	1466	1441	1450
10°	1452	1412	1403
15°	1432	1366	1330
20°	1405	1301	1240
25°	1378	1229	1154
30°	1342	1155	1044
35°	1306	1076	948
40°	1270	993	837
45°	1228	902	737
50°	1185	810	639
55°	1139	711	546
60°	1086	608	449
65°	1026	504	404
70°	953	406	366
75°	861	358	332
80°	727	300	288
85°	507	201	217

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1916 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.7	1.2
10°-20°	474.1	3.3
20°-30°	665.6	4.6
30°-40°	725.6	5.0
40°-50°	666.9	4.6
50°-60°	523.7	3.6
60°-70°	340.9	2.4
70°-80°	175.5	1.2
80°-90°	51.2	0.4
90°-100°	119.1	0.8
100°-110°	443.9	3.1
110°-120°	1177.3	8.2
120°-130°	1952.7	13.6
130°-140°	2074.2	14.4
140°-150°	1927.7	13.4
150°-160°	1549.8	10.8
160°-170°	998.7	6.9
170°-180°	343.7	2.4
0°-30°	1312.4	9.1
0°-40°	2038.0	14.2
0°-60°	3228.6	22.4
0°-90°	3796.1	26.4
90°-120°	1740.3	12.1
90°-150°	7694.9	53.5
90°-180°	10587.0	73.6
0°-180°	14383.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1843	1843	1843	1843	1843	
5°	1843	1834	1813	1828	1823	175
15°	1753	1734	1678	1646	1629	494
25°	1591	1538	1427	1359	1334	732
35°	1371	1286	1139	1034	997	858
45°	1121	1009	834	715	675	865
55°	852	722	542	442	410	761
65°	575	440	290	234	228	570
75°	307	190	133	122	120	324
85°	72	37	32	32	32	82
90°	2	31	52	66	70	13
95°	170	84	102	115	112	201
105°	794	873	160	188	199	849
115°	1502	1547	1612	402	214	1479
125°	2124	2158	2208	2226	2234	1895
135°	2629	2671	2694	2720	2715	2031
145°	3050	3047	3091	3110	3096	1907
155°	3358	3334	3366	3381	3361	1547
165°	3538	3522	3530	3549	3530	1000
175°	3619	3601	3606	3624	3598	344
180°	3611	3611	3611	3611	3611	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1842.7	1842.7	1842.7	1842.7	1842.7
2.5°	1851.0	1842.7	1824.4	1841.1	1837.7
5°	1842.7	1834.4	1812.7	1827.6	1822.7
7.5°	1827.6	1817.8	1794.4	1801.0	1792.6
10°	1807.7	1796.0	1762.7	1757.7	1747.7
12.5°	1782.7	1767.7	1722.6	1712.7	1694.2
15°	1752.7	1734.3	1677.7	1646.0	1629.3
17.5°	1717.6	1691.0	1620.9	1584.2	1557.5
20°	1677.7	1644.2	1560.8	1519.3	1482.5
22.5°	1634.3	1595.9	1499.1	1442.5	1417.6
25°	1590.9	1537.5	1427.4	1359.1	1334.0
27.5°	1539.3	1482.5	1360.8	1282.4	1244.0
30°	1484.3	1420.8	1287.4	1202.4	1157.3
32.5°	1430.8	1354.1	1217.5	1117.3	1075.6
35°	1370.8	1285.8	1139.1	1033.9	997.2
37.5°	1312.4	1220.7	1065.7	950.5	908.9
40°	1250.7	1150.8	988.8	870.5	827.2
42.5°	1187.4	1080.7	912.2	788.7	747.2
45°	1120.7	1008.9	833.8	715.3	675.3
47.5°	1057.3	939.0	758.8	640.3	603.7
50°	987.3	868.9	685.5	570.2	535.4
52.5°	918.8	793.7	615.4	505.3	473.7
55°	852.1	722.0	541.9	441.9	410.3
57.5°	783.8	650.4	477.0	383.6	356.9
60°	713.7	580.3	408.5	323.6	296.9
62.5°	645.4	512.0	350.2	270.2	256.9
65°	575.3	440.2	290.2	233.5	228.5
67.5°	508.6	373.5	233.5	205.1	200.1
70°	438.6	308.5	193.4	176.7	170.0
72.5°	371.9	248.4	161.8	148.5	145.1
75°	306.8	190.0	133.4	121.7	120.1
77.5°	241.8	135.0	105.1	98.4	95.0
80°	181.7	96.8	80.0	73.4	73.4
82.5°	126.7	65.1	55.0	51.6	51.6
85°	71.7	36.6	31.7	31.7	31.7
87.5°	26.8	13.3	13.3	11.7	11.7
90°	2.5	31.3	52.2	65.5	70.4
92.5°	65.5	54.9	62.7	67.9	70.4
95°	169.7	83.5	101.7	115.1	112.4
97.5°	305.7	91.6	133.1	141.2	143.7
100°	462.6	104.6	148.9	169.7	175.0
102.5°	634.9	629.9	154.2	182.8	190.8
105°	794.3	872.9	159.5	188.1	198.6
107.5°	979.9	1045.1	164.8	193.3	203.8
110°	1157.7	1212.4	457.4	196.1	206.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1325.0	1371.8	1327.5	201.1	209.1
115°	1502.4	1546.8	1612.3	402.4	214.5
117.5°	1656.7	1708.9	1753.5	1379.6	695.1
120°	1829.3	1868.3	1915.5	1946.9	1594.0
122.5°	1975.4	2017.3	2069.7	2085.3	2088.0
125°	2124.3	2158.5	2208.1	2226.4	2234.2
127.5°	2260.2	2296.9	2336.3	2362.3	2364.8
130°	2388.4	2430.3	2458.8	2487.7	2485.2
132.5°	2519.0	2553.1	2581.7	2605.3	2602.8
135°	2628.9	2670.8	2694.0	2720.4	2715.2
137.5°	2743.7	2775.0	2801.4	2827.4	2819.7
140°	2856.1	2877.1	2905.6	2929.3	2916.2
142.5°	2950.3	2968.7	3002.5	3023.3	3010.2
145°	3049.6	3046.9	3091.2	3109.6	3096.5
147.5°	3135.6	3127.9	3172.3	3185.3	3175.0
150°	3219.3	3201.1	3243.0	3258.5	3245.5
152.5°	3289.8	3269.0	3308.2	3323.9	3305.7
155°	3357.7	3334.5	3365.8	3381.4	3360.6
157.5°	3412.7	3391.9	3415.5	3433.8	3412.7
160°	3459.8	3444.1	3459.8	3475.4	3457.1
162.5°	3501.5	3486.0	3499.0	3517.3	3493.7
165°	3538.0	3522.5	3530.3	3548.7	3530.3
167.5°	3566.9	3551.1	3559.2	3577.5	3553.9
170°	3590.5	3574.7	3579.9	3598.2	3574.7
172.5°	3606.0	3590.5	3595.8	3614.1	3590.5
175°	3619.0	3600.7	3606.0	3624.4	3598.2
177.5°	3624.4	3606.0	3608.8	3627.1	3603.6
180°	3611.3	3611.3	3611.3	3611.3	3611.3

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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	5.71	6.38	6.85	7.51	9.08	1.69	2.35	2.83	3.48	5.06
	3H	7.38	7.97	8.53	9.11	10.70	2.86	3.46	4.01	4.60	6.19
	4H	7.98	8.55	9.13	9.68	11.28	3.31	3.87	4.46	5.01	6.61
	6H	8.39	8.91	9.56	10.05	11.66	3.62	4.14	4.78	5.28	6.89
	8H	8.51	9.01	9.68	10.16	11.76	3.71	4.20	4.87	5.36	6.95
	12H	8.57	9.04	9.74	10.19	11.81	3.74	4.22	4.92	5.36	6.98
4H	2H	5.71	6.28	6.88	7.41	9.01	2.26	2.83	3.43	3.97	5.56
	3H	7.52	8.00	8.69	9.16	10.77	3.60	4.07	4.77	5.23	6.84
	4H	8.21	8.64	9.38	9.80	11.42	4.14	4.57	5.31	5.72	7.35
	6H	8.72	9.09	9.89	10.26	11.88	4.55	4.92	5.73	6.10	7.71
	8H	8.89	9.23	10.06	10.40	12.03	4.68	5.02	5.85	6.19	7.82
	12H	8.98	9.29	10.17	10.47	12.10	4.73	5.05	5.93	6.23	7.86
8H	4H	8.17	8.51	9.34	9.68	11.31	4.41	4.75	5.58	5.92	7.55
	6H	8.73	9.01	9.92	10.22	11.85	4.92	5.21	6.12	6.41	8.04
	8H	8.94	9.19	10.14	10.38	12.02	5.11	5.36	6.31	6.55	8.19
	12H	9.07	9.29	10.28	10.47	12.16	5.22	5.44	6.43	6.63	8.31
12H	4H	8.11	8.43	9.30	9.60	11.24	4.40	4.72	5.60	5.90	7.53
	6H	8.70	8.95	9.90	10.13	11.78	4.97	5.22	6.17	6.40	8.05
	8H	8.91	9.13	10.12	10.31	12.00	5.17	5.39	6.38	6.57	8.26

END OF REPORT