

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: P923439

Luminaire Tested: DFN2DIP-TR2F0-060D020US940-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923439
REPORT IS A COMBINATION OF REPORTS P901750 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-060D020US940-RLLONL
Description: 2 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

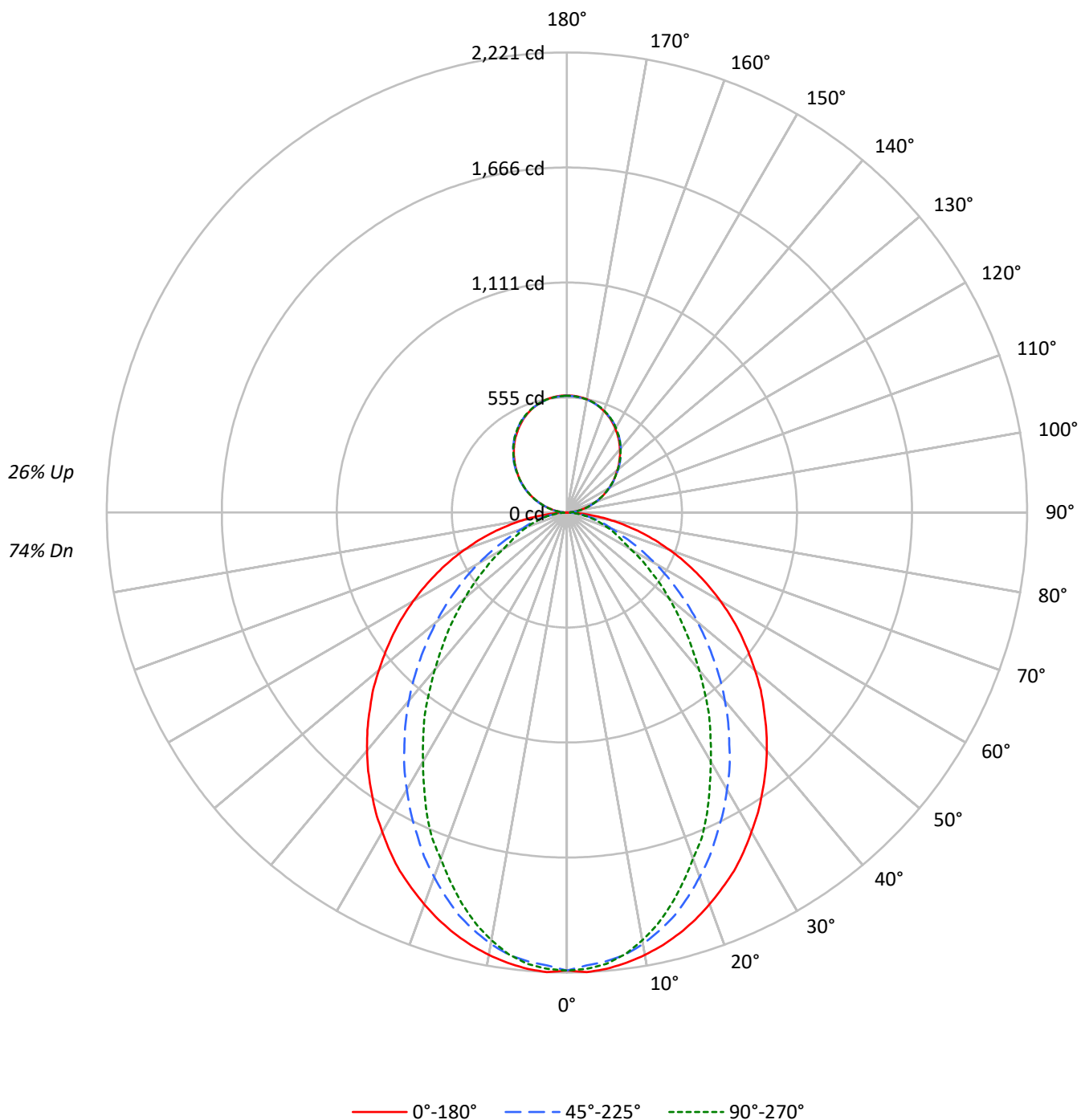
Lumens per Lamp: N/A
Luminaire Lumens: 6126.0 lumens
Efficiency: N/A
Efficacy: 82.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 74.7
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	113	113	113	113	107	107	107	107	97	97	97	87	87	87	78	78	78
1	104	100	96	93	99	95	92	89	86	84	81	78	76	74	70	69	68
2	95	88	82	77	90	84	79	74	76	72	68	69	66	63	63	60	58
3	87	78	71	65	83	75	68	63	68	63	58	62	58	54	56	53	50
4	80	70	62	56	76	67	60	54	61	55	51	56	51	47	51	47	44
5	74	63	54	48	70	60	53	47	55	49	44	51	45	42	46	42	39
6	69	57	48	43	65	54	47	41	50	44	39	46	41	37	42	38	35
7	64	51	43	38	61	49	42	37	46	39	35	42	37	33	39	34	31
8	59	47	39	34	57	45	38	33	42	36	31	39	34	30	36	31	28
9	56	43	36	31	53	42	35	30	39	33	28	36	31	27	33	29	26
10	52	40	33	28	50	39	32	27	36	30	26	33	28	25	31	27	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4932	4932	4932
5°	4933	4843	4876
10°	4876	4737	4709
15°	4802	4569	4456
20°	4706	4344	4149
25°	4608	4093	3852
30°	4478	3836	3478
35°	4350	3561	3150
40°	4220	3277	2776
45°	4070	2965	2437
50°	3913	2650	2107
55°	3749	2315	1789
60°	3560	1967	1465
65°	3341	1614	1309
70°	3074	1285	1173
75°	2740	1112	1051
80°	2258	902	886
85°	1483	560	624

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 4070 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.2	3.4
10°-20°	568.9	9.3
20°-30°	798.7	13.0
30°-40°	870.7	14.2
40°-50°	800.3	13.1
50°-60°	628.5	10.3
60°-70°	409.1	6.7
70°-80°	210.6	3.4
80°-90°	55.4	0.9
90°-100°	34.9	0.6
100°-110°	110.9	1.8
110°-120°	189.8	3.1
120°-130°	249.6	4.1
130°-140°	280.2	4.6
140°-150°	274.7	4.5
150°-160°	230.4	3.8
160°-170°	152.8	2.5
170°-180°	53.4	0.9
0°-30°	1574.9	25.7
0°-40°	2445.6	39.9
0°-60°	3874.3	63.2
0°-90°	4549.3	74.3
90°-120°	335.6	5.5
90°-150°	1140.0	18.6
90°-180°	1577.0	25.7
0°-180°	6126.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2211	2211	2211	2211	2211	
5°	2211	2201	2175	2193	2187	210
15°	2103	2081	2013	1975	1955	593
25°	1909	1845	1713	1631	1601	878
35°	1645	1543	1367	1241	1197	1030
45°	1345	1211	1001	858	810	1039
55°	1022	866	650	530	492	914
65°	690	528	348	280	274	685
75°	368	228	160	146	144	389
85°	86	44	38	38	38	99
90°	0	6	17	16	16	6
95°	25	30	30	30	30	28
105°	102	104	105	106	106	108
115°	190	193	192	192	190	188
125°	277	281	280	278	278	248
135°	358	364	364	364	363	277
145°	435	438	441	442	440	272
155°	497	499	500	503	501	229
165°	541	541	541	544	542	153
175°	563	562	561	564	561	53
180°	564	564	564	564	564	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2211.3	2211.3	2211.3	2211.3	2211.3
2.5°	2221.3	2211.3	2189.1	2209.3	2205.3
5°	2211.3	2201.3	2175.1	2193.3	2187.3
7.5°	2193.3	2181.3	2153.3	2161.1	2151.2
10°	2169.2	2155.2	2115.3	2109.2	2097.2
12.5°	2139.3	2121.2	2067.1	2055.2	2033.1
15°	2103.2	2081.1	2013.1	1975.1	1955.2
17.5°	2061.2	2029.1	1945.0	1901.0	1869.0
20°	2013.1	1973.0	1873.0	1823.1	1779.0
22.5°	1961.1	1915.0	1798.9	1731.0	1701.0
25°	1909.2	1845.0	1713.0	1631.0	1600.9
27.5°	1847.2	1779.0	1632.9	1538.8	1492.8
30°	1781.1	1704.9	1544.8	1442.9	1388.7
32.5°	1717.0	1624.9	1461.0	1340.8	1290.7
35°	1645.0	1542.9	1366.9	1240.7	1196.6
37.5°	1574.9	1464.7	1278.8	1140.6	1090.7
40°	1500.8	1380.9	1186.6	1044.5	992.6
42.5°	1424.9	1296.8	1094.7	946.5	896.6
45°	1344.8	1210.6	1000.7	858.4	810.4
47.5°	1268.8	1126.8	910.6	768.4	724.4
50°	1184.7	1042.7	822.5	684.3	642.5
52.5°	1102.5	952.4	738.4	606.4	568.4
55°	1022.5	866.5	650.3	530.4	492.3
57.5°	940.6	780.4	572.4	460.3	428.2
60°	856.5	696.4	490.3	388.3	356.2
62.5°	774.5	614.5	420.2	324.2	308.3
65°	690.5	528.2	348.2	280.3	274.1
67.5°	610.4	448.2	280.3	246.1	240.1
70°	526.3	370.2	232.0	212.1	204.0
72.5°	446.3	298.1	194.0	178.2	174.1
75°	368.2	228.0	160.1	146.1	144.2
77.5°	290.3	162.0	126.1	118.1	114.0
80°	218.0	116.1	95.9	88.1	88.1
82.5°	152.0	78.1	66.0	62.0	62.0
85°	86.0	44.0	38.0	38.0	38.0
87.5°	32.1	16.0	16.0	14.0	14.0
90°	0.5	6.2	16.7	15.6	16.1
92.5°	10.5	14.3	14.8	15.3	15.3
95°	24.8	29.6	30.4	30.4	29.6
97.5°	41.3	45.7	47.6	47.6	47.6
100°	60.4	64.3	65.6	65.6	65.1
102.5°	80.4	83.3	85.2	85.7	85.2
105°	102.4	103.7	104.8	105.6	105.6
107.5°	124.1	126.2	126.2	126.5	124.1
110°	145.3	147.9	147.9	147.9	146.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	168.0	170.9	170.4	169.0	168.0
115°	190.5	193.1	192.3	191.8	190.5
117.5°	212.8	216.5	214.1	212.8	211.3
120°	235.1	238.9	235.1	235.1	233.6
122.5°	255.6	260.3	258.0	256.6	255.6
125°	277.0	281.2	279.9	278.4	277.9
127.5°	297.9	303.2	301.3	299.3	297.9
130°	317.4	323.6	322.7	321.7	319.9
132.5°	339.4	344.2	344.5	342.1	340.7
135°	358.3	363.6	364.5	364.1	362.7
137.5°	379.3	383.6	384.5	384.1	382.1
140°	397.9	402.2	404.6	404.6	402.7
142.5°	417.0	421.2	422.6	423.0	421.2
145°	435.0	438.4	441.1	441.6	439.7
147.5°	451.1	455.4	457.4	458.2	456.4
150°	467.8	470.6	472.5	474.0	472.5
152.5°	482.6	485.4	487.9	489.7	487.9
155°	497.4	498.7	500.2	502.7	501.1
157.5°	510.1	511.1	512.0	515.4	513.0
160°	521.6	522.5	523.1	525.9	523.9
162.5°	532.1	532.1	532.5	535.8	533.4
165°	541.1	540.6	540.6	543.9	541.6
167.5°	549.2	547.7	547.7	551.1	548.8
170°	555.4	554.0	553.5	556.9	554.0
172.5°	559.6	558.2	557.8	561.2	558.2
175°	563.0	561.7	560.6	564.0	561.2
177.5°	564.9	563.6	562.5	565.3	562.5
180°	564.0	564.0	564.0	564.0	564.0



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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	14.58	15.66	15.31	16.40	17.28	10.56	11.64	11.29	12.38	13.26
	3H	16.25	17.22	16.99	17.97	18.88	11.76	12.72	12.49	13.47	14.38
	4H	16.86	17.77	17.61	18.52	19.45	12.21	13.11	12.96	13.87	14.80
	6H	17.27	18.11	18.04	18.88	19.82	12.53	13.36	13.30	14.13	15.07
	8H	17.40	18.19	18.18	18.98	19.92	12.62	13.41	13.40	14.20	15.14
	12H	17.46	18.21	18.24	19.00	19.96	12.66	13.42	13.44	14.20	15.17
4H	2H	14.63	15.53	15.39	16.29	17.22	11.18	12.08	11.94	12.84	13.77
	3H	16.45	17.20	17.22	18.00	18.94	12.53	13.28	13.30	14.08	15.02
	4H	17.13	17.82	17.92	18.61	19.58	13.07	13.76	13.86	14.55	15.52
	6H	17.64	18.23	18.44	19.05	20.03	13.49	14.08	14.29	14.90	15.88
	8H	17.81	18.36	18.61	19.17	20.16	13.61	14.17	14.42	14.98	15.97
	12H	17.90	18.40	18.73	19.23	20.23	13.68	14.18	14.51	15.01	16.01
8H	4H	17.12	17.67	17.92	18.48	19.47	13.36	13.91	14.17	14.72	15.71
	6H	17.67	18.12	18.50	18.98	19.97	13.86	14.32	14.70	15.18	16.17
	8H	17.87	18.27	18.72	19.13	20.13	14.04	14.45	14.89	15.30	16.31
	12H	18.00	18.36	18.85	19.20	20.26	14.16	14.52	15.01	15.36	16.42
12H	4H	17.08	17.57	17.91	18.41	19.40	13.37	13.87	14.20	14.70	15.70
	6H	17.64	18.05	18.49	18.90	19.91	13.91	14.31	14.76	15.17	16.17
	8H	17.85	18.21	18.70	19.06	20.12	14.11	14.47	14.96	15.32	16.38