

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: P923437

Luminaire Tested: DFN2DIP-TR2F0-060D020US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923437
REPORT IS A COMBINATION OF REPORTS P901749 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-060D020US940-FLLONL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

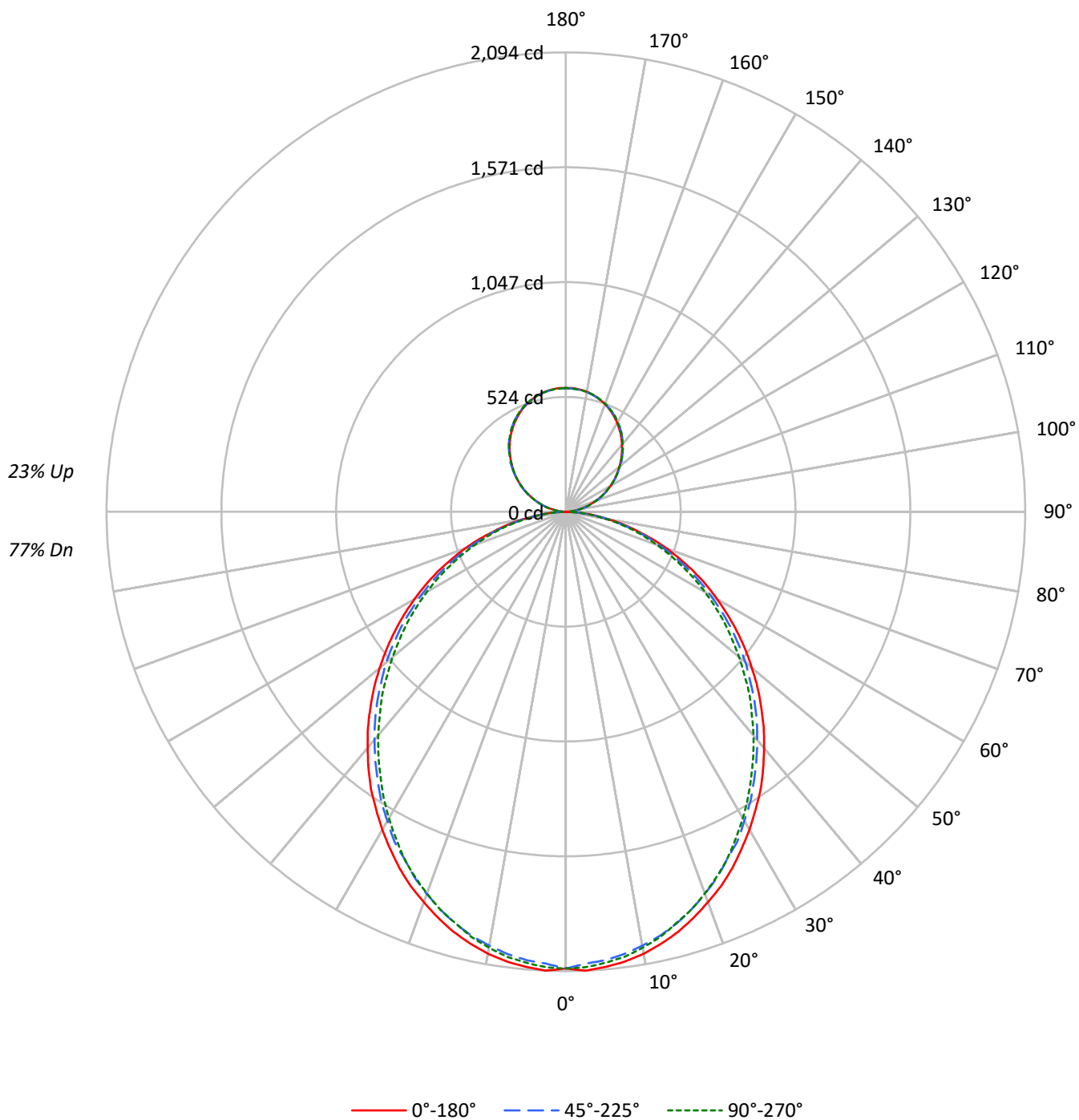
Lumens per Lamp: N/A
Luminaire Lumens: 6875.1 lumens
Efficiency: N/A
Efficacy: 92.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 74.7
Input Voltage (V): 120
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

TEST NUMBER: P923437

CATALOG NUMBER: DFN2DIP-TR2F0-060D020US940-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P923437

CATALOG NUMBER: DFN2DIP-TR2F0-060D020US940-FLONL

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	114	114	114	114	108	108	108	108	98	98	98	89	89	89	81	81	81
1	104	99	95	92	99	95	91	88	86	84	81	79	77	75	72	70	68
2	95	87	80	75	90	83	77	72	76	71	67	69	66	62	63	60	58
3	86	76	69	63	82	73	66	61	67	61	57	61	57	53	56	52	49
4	79	68	59	53	75	65	57	52	60	53	48	55	50	45	50	46	42
5	73	61	52	46	69	58	50	44	53	47	42	49	44	39	45	41	37
6	67	55	46	40	64	52	45	39	48	42	37	45	39	35	41	36	33
7	62	49	41	35	59	48	40	34	44	37	33	41	35	31	37	33	29
8	58	45	37	31	55	43	36	31	40	34	29	37	32	28	34	30	26
9	54	41	33	28	52	40	32	27	37	31	26	34	29	25	32	27	24
10	51	38	30	25	48	37	30	25	34	28	24	32	26	23	30	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4643	4643	4643
5°	4644	4568	4601
10°	4599	4496	4531
15°	4525	4412	4426
20°	4426	4299	4318
25°	4329	4166	4196
30°	4208	4041	4041
35°	4092	3896	3879
40°	3951	3749	3723
45°	3811	3600	3564
50°	3657	3444	3380
55°	3494	3265	3209
60°	3311	3053	3013
65°	3109	2831	2783
70°	2854	2561	2532
75°	2502	2238	2290
80°	2074	1825	1851
85°	1412	1150	1151

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3811 cd/sqm

TEST NUMBER: P923437

CATALOG NUMBER: DFN2DIP-TR2F0-060D020US940-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.9	2.8
10°-20°	551.3	8.0
20°-30°	810.2	11.8
30°-40°	941.0	13.7
40°-50°	939.8	13.7
50°-60°	819.5	11.9
60°-70°	605.8	8.8
70°-80°	342.7	5.0
80°-90°	92.1	1.3
90°-100°	34.9	0.5
100°-110°	110.9	1.6
110°-120°	189.8	2.8
120°-130°	249.6	3.6
130°-140°	280.2	4.1
140°-150°	274.7	4.0
150°-160°	230.4	3.4
160°-170°	152.8	2.2
170°-180°	53.4	0.8
0°-30°	1557.4	22.7
0°-40°	2498.4	36.3
0°-60°	4257.8	61.9
0°-90°	5298.4	77.1
90°-120°	335.6	4.9
90°-150°	1140.0	16.6
90°-180°	1577.0	22.9
0°-180°	6875.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2082	2082	2082	2082	2082	
5°	2082	2074	2052	2068	2064	198
15°	1982	1970	1944	1952	1942	558
25°	1794	1778	1744	1748	1744	825
35°	1548	1528	1495	1483	1473	966
45°	1259	1245	1215	1193	1185	972
55°	953	941	917	893	883	852
65°	643	631	611	592	583	635
75°	336	332	322	310	314	359
85°	82	80	78	72	70	91
90°	0	6	17	16	16	7
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	

TEST NUMBER: P923437

CATALOG NUMBER: DFN2DIP-TR2F0-060D020US940-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2081.8	2081.8	2081.8	2081.8	2081.8
2.5°	2093.9	2083.9	2061.8	2081.8	2078.0
5°	2081.8	2073.9	2051.8	2067.8	2064.0
7.5°	2067.8	2055.9	2033.8	2050.0	2045.9
10°	2045.9	2031.9	2007.9	2023.8	2017.9
12.5°	2015.8	2003.9	1979.9	1989.9	1985.8
15°	1981.7	1969.9	1943.8	1951.9	1941.9
17.5°	1939.7	1927.9	1901.8	1911.6	1901.8
20°	1893.6	1881.8	1853.7	1859.7	1851.8
22.5°	1847.8	1829.7	1803.6	1803.6	1799.6
25°	1793.6	1777.7	1743.7	1747.5	1743.7
27.5°	1733.5	1719.5	1693.5	1687.7	1677.7
30°	1673.7	1657.4	1627.5	1621.6	1613.5
32.5°	1609.4	1597.6	1565.5	1553.4	1545.3
35°	1547.5	1527.5	1495.4	1483.3	1473.3
37.5°	1477.4	1459.3	1427.3	1413.2	1403.2
40°	1405.3	1389.2	1357.2	1339.3	1331.2
42.5°	1335.2	1319.1	1287.3	1267.1	1255.2
45°	1259.3	1245.2	1215.0	1193.2	1185.1
47.5°	1185.1	1171.1	1139.1	1117.0	1105.0
50°	1107.0	1097.0	1069.0	1040.9	1030.9
52.5°	1030.9	1016.9	991.0	968.9	954.9
55°	953.0	940.8	916.9	892.9	882.9
57.5°	874.9	864.9	838.7	814.8	806.6
60°	796.7	788.8	760.8	738.7	732.7
62.5°	720.6	706.6	686.6	666.6	658.6
65°	642.7	630.6	610.6	592.5	582.6
67.5°	562.6	552.4	534.6	520.6	512.5
70°	488.5	480.5	462.4	448.4	440.5
72.5°	412.4	404.4	394.4	380.4	374.4
75°	336.2	332.4	322.2	310.3	314.3
77.5°	268.2	260.2	256.1	250.2	244.2
80°	200.3	198.1	194.1	188.2	184.1
82.5°	136.2	136.2	134.2	126.2	126.2
85°	81.9	80.1	78.1	72.0	70.1
87.5°	36.1	32.1	28.0	22.1	20.0
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



TEST NUMBER: P923437

CATALOG NUMBER: DFN2DIP-TR2F0-060D020US940-FLLONL

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	14.68	15.85	15.36	16.55	17.37	14.25	15.42	14.94	16.13	16.95
	3H	16.34	17.39	17.03	18.10	18.96	15.87	16.93	16.57	17.64	18.50
	4H	16.92	17.92	17.64	18.64	19.51	16.46	17.46	17.18	18.18	19.05
	6H	17.32	18.24	18.05	18.97	19.85	16.86	17.78	17.59	18.51	19.39
	8H	17.42	18.30	18.16	19.05	19.94	16.96	17.84	17.70	18.59	19.48
	12H	17.47	18.31	18.22	19.05	19.97	17.01	17.84	17.76	18.59	19.50
4H	2H	15.17	16.16	15.88	16.88	17.75	14.83	15.82	15.55	16.54	17.41
	3H	17.03	17.86	17.76	18.62	19.51	16.65	17.48	17.38	18.24	19.12
	4H	17.74	18.49	18.49	19.25	20.17	17.34	18.10	18.09	18.86	19.78
	6H	18.25	18.90	19.02	19.69	20.61	17.85	18.51	18.62	19.29	20.22
	8H	18.39	19.01	19.17	19.79	20.73	18.00	18.61	18.77	19.39	20.33
	12H	18.47	19.02	19.26	19.83	20.77	18.07	18.62	18.86	19.42	20.36
8H	4H	17.95	18.56	18.72	19.34	20.28	17.60	18.21	18.37	18.99	19.93
	6H	18.57	19.07	19.37	19.90	20.84	18.21	18.72	19.02	19.55	20.48
	8H	18.77	19.23	19.59	20.05	21.00	18.42	18.87	19.23	19.69	20.65
	12H	18.91	19.30	19.72	20.12	21.13	18.54	18.93	19.35	19.75	20.76
12H	4H	17.95	18.50	18.74	19.30	20.25	17.60	18.15	18.40	18.96	19.90
	6H	18.59	19.05	19.41	19.87	20.82	18.25	18.70	19.06	19.53	20.48
	8H	18.83	19.23	19.65	20.05	21.06	18.49	18.89	19.30	19.70	20.71

END OF REPORT