

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: P910256

Luminaire Tested: DFN2DIP-TR4F0-110D050US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910256
REPORT IS A COMBINATION OF REPORTS P900402 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-110D050US840-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

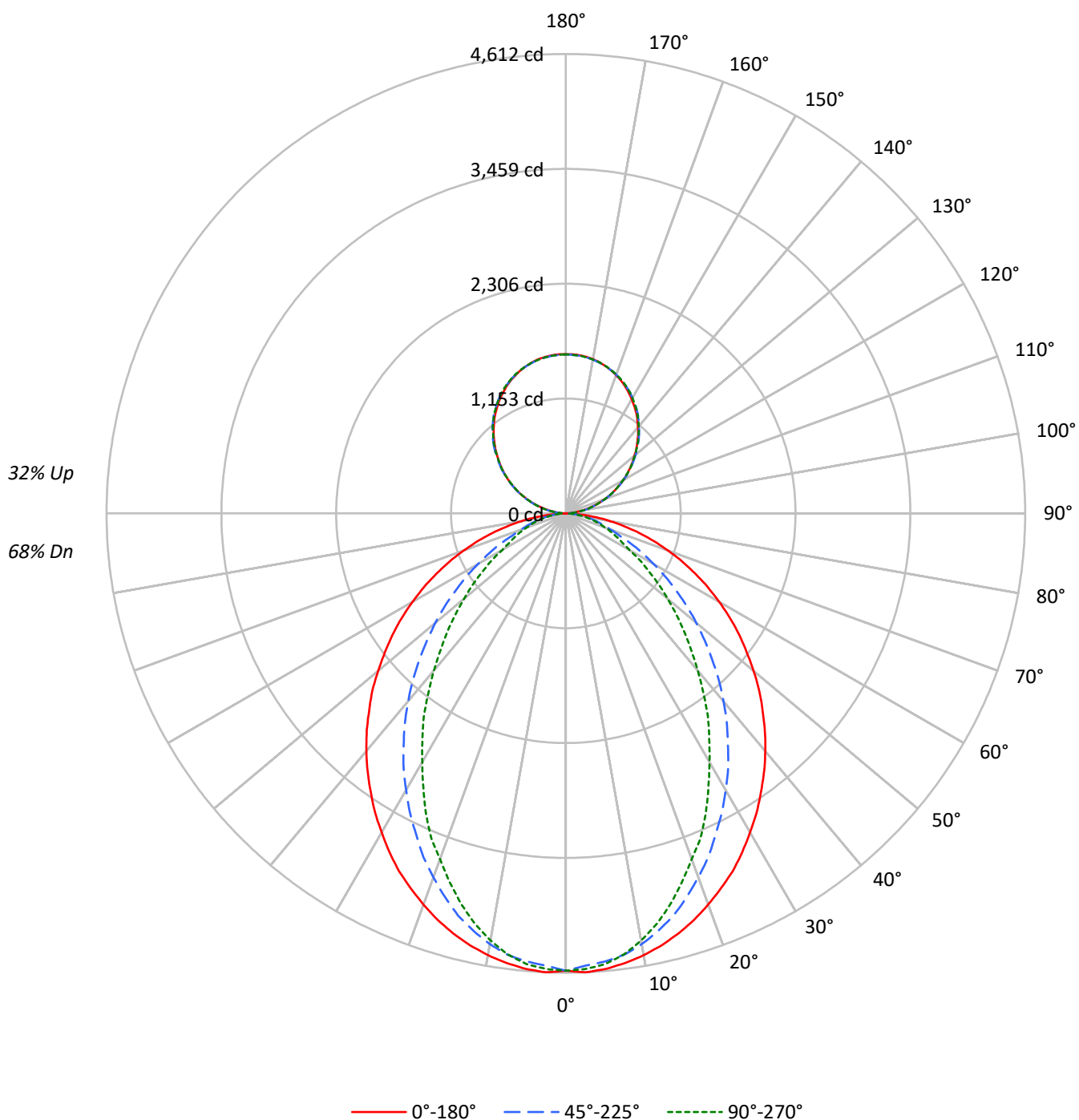
Lumens per Lamp: N/A
Luminaire Lumens: 13910.9 lumens
Efficiency: N/A
Efficacy: 92.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 150.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9613
Total Harmonic Distortion (THDi): 0.083
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P910256

CATALOG NUMBER: DFN2DIP-TR4F0-110D050US840-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P910256

CATALOG NUMBER: DFN2DIP-TR4F0-110D050US840-RLLFLL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20			
RC	80				70				50				30				10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	111	111	111	111	105	105	105	105	93	93	93	82	82	82	73	73	73	68		
1	102	98	94	91	97	93	90	87	83	80	78	74	72	70	65	64	63	59		
2	94	87	81	76	88	82	77	72	73	69	66	66	62	60	58	56	54	50		
3	86	77	70	64	81	73	66	61	65	60	56	59	55	51	52	49	47	43		
4	79	68	61	55	74	65	58	53	59	53	49	53	48	45	47	44	41	38		
5	73	61	53	47	69	58	51	46	53	47	42	48	43	39	43	39	36	33		
6	68	56	47	42	64	53	46	40	48	42	37	43	38	35	39	35	32	29		
7	63	50	42	37	59	48	41	36	44	38	33	40	35	31	36	32	29	26		
8	58	46	38	33	55	44	37	32	40	34	30	37	32	28	33	29	26	24		
9	55	42	35	30	52	40	34	29	37	31	27	34	29	25	31	27	24	22		
10	51	39	32	27	48	37	31	26	34	29	25	31	27	23	29	25	22	20		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3647	3647	3647
5°	3653	3589	3612
10°	3617	3519	3495
15°	3567	3403	3313
20°	3501	3242	3090
25°	3434	3062	2874
30°	3343	2878	2601
35°	3255	2680	2361
40°	3164	2475	2086
45°	3060	2248	1837
50°	2951	2018	1593
55°	2838	1773	1359
60°	2707	1516	1119
65°	2556	1255	1007
70°	2373	1012	911
75°	2144	892	828
80°	1811	748	718
85°	1262	499	539

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3060 cd/sqm

TEST NUMBER: P910256

CATALOG NUMBER: DFN2DIP-TR4F0-110D050US840-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	430.3	3.1
10°-20°	1181.2	8.5
20°-30°	1658.4	11.9
30°-40°	1807.8	13.0
40°-50°	1661.5	11.9
50°-60°	1304.9	9.4
60°-70°	849.4	6.1
70°-80°	437.2	3.1
80°-90°	116.2	0.8
90°-100°	98.8	0.7
100°-110°	314.0	2.3
110°-120°	537.3	3.9
120°-130°	706.6	5.1
130°-140°	793.2	5.7
140°-150°	777.8	5.6
150°-160°	652.5	4.7
160°-170°	432.7	3.1
170°-180°	151.2	1.1
0°-30°	3269.9	23.5
0°-40°	5077.7	36.5
0°-60°	8044.1	57.8
0°-90°	9446.8	67.9
90°-120°	950.1	6.8
90°-150°	3227.7	23.2
90°-180°	4464.0	32.1
0°-180°	13910.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4591	4591	4591	4591	4591	
5°	4591	4570	4516	4554	4541	435
15°	4367	4321	4180	4101	4060	1231
25°	3964	3831	3556	3386	3324	1823
35°	3416	3203	2838	2576	2484	2138
45°	2792	2514	2078	1782	1683	2156
55°	2123	1799	1350	1101	1022	1897
65°	1434	1097	723	582	569	1421
75°	764	473	332	303	299	808
85°	178	91	79	79	79	205
90°	1	17	47	44	46	14
95°	70	84	86	86	84	78
105°	290	294	297	299	299	306
115°	539	547	544	543	539	533
125°	784	796	792	788	787	701
135°	1014	1029	1032	1031	1027	784
145°	1232	1241	1249	1250	1245	769
155°	1408	1412	1416	1423	1419	648
165°	1532	1530	1530	1540	1533	432
175°	1594	1590	1587	1597	1589	151
180°	1597	1597	1597	1597	1597	

TEST NUMBER: P910256

CATALOG NUMBER: DFN2DIP-TR4F0-110D050US840-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4591.2	4591.2	4591.2	4591.2	4591.2
2.5°	4611.9	4591.2	4545.3	4587.2	4578.8
5°	4591.2	4570.4	4516.2	4553.7	4541.4
7.5°	4553.7	4528.9	4470.8	4487.1	4466.3
10°	4503.9	4474.7	4391.9	4379.1	4354.4
12.5°	4441.7	4404.2	4291.8	4267.1	4221.2
15°	4366.8	4320.9	4179.8	4101.0	4059.5
17.5°	4279.5	4213.0	4038.4	3947.1	3880.5
20°	4179.8	4096.5	3888.9	3785.3	3693.6
22.5°	4071.9	3976.1	3735.1	3594.0	3531.8
25°	3963.8	3830.7	3556.5	3386.4	3323.8
27.5°	3835.2	3693.6	3390.3	3195.0	3099.4
30°	3698.0	3539.8	3207.4	2995.8	2883.4
32.5°	3564.9	3373.6	3033.2	2783.8	2679.8
35°	3415.5	3203.4	2838.0	2576.2	2484.5
37.5°	3270.0	3041.2	2655.0	2368.0	2264.5
40°	3116.1	2867.1	2463.8	2168.8	2060.8
42.5°	2958.3	2692.5	2272.9	1965.2	1861.6
45°	2792.2	2513.6	2077.6	1782.2	1682.6
47.5°	2634.3	2339.5	1890.7	1595.3	1504.1
50°	2459.7	2164.8	1707.8	1420.8	1333.9
52.5°	2289.2	1977.5	1533.2	1259.0	1180.0
55°	2122.9	1799.0	1350.2	1101.2	1022.3
57.5°	1952.9	1620.4	1188.4	955.7	889.1
60°	1778.3	1445.9	1017.8	806.3	739.7
62.5°	1608.1	1275.8	872.4	673.2	640.1
65°	1433.5	1096.7	723.0	581.9	569.1
67.5°	1267.4	930.6	581.9	510.9	498.6
70°	1092.8	768.8	481.8	440.4	423.6
72.5°	926.6	618.9	402.9	369.8	361.4
75°	764.4	473.4	332.3	303.3	299.3
77.5°	602.6	336.4	261.9	245.1	236.7
80°	452.7	241.2	199.2	183.0	183.0
82.5°	315.6	162.2	137.1	128.8	128.8
85°	178.5	91.3	78.9	78.9	78.9
87.5°	66.6	33.0	33.0	29.1	29.1
90°	1.4	17.4	47.2	44.3	45.7
92.5°	29.9	40.4	41.9	43.3	43.3
95°	70.3	83.8	86.1	86.1	83.8
97.5°	116.9	129.5	134.8	134.8	134.8
100°	170.9	182.0	185.8	185.8	184.4
102.5°	227.7	235.9	241.2	242.7	241.2
105°	289.8	293.7	296.6	298.9	298.9
107.5°	351.4	357.2	357.2	358.2	351.4
110°	411.1	418.9	418.9	418.9	415.0

TEST NUMBER: P910256

CATALOG NUMBER: DFN2DIP-TR4F0-110D050US840-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	475.6	483.8	482.4	478.6	475.6
115°	539.2	546.9	544.5	543.1	539.2
117.5°	602.3	612.9	606.1	602.3	598.4
120°	665.8	676.4	665.8	665.8	661.5
122.5°	723.6	737.1	730.3	726.5	723.6
125°	784.3	796.3	792.4	788.1	786.7
127.5°	843.4	858.4	853.1	847.3	843.4
130°	898.9	916.2	913.7	910.9	905.5
132.5°	961.0	974.4	975.4	968.7	964.8
135°	1014.4	1029.3	1032.2	1030.8	1026.9
137.5°	1074.1	1086.1	1088.5	1087.5	1081.8
140°	1126.5	1138.6	1145.3	1145.3	1140.0
142.5°	1180.4	1192.6	1196.4	1197.8	1192.6
145°	1231.5	1241.1	1248.8	1250.3	1245.0
147.5°	1277.3	1289.3	1295.1	1297.5	1292.1
150°	1324.4	1332.6	1337.9	1342.2	1337.9
152.5°	1366.3	1374.5	1381.2	1386.5	1381.2
155°	1408.2	1412.0	1416.3	1423.1	1418.8
157.5°	1444.3	1447.1	1449.6	1459.3	1452.5
160°	1476.5	1479.5	1480.9	1489.0	1483.3
162.5°	1506.4	1506.4	1507.8	1517.0	1510.3
165°	1532.0	1530.5	1530.5	1540.1	1533.4
167.5°	1555.0	1550.6	1550.6	1560.3	1553.6
170°	1572.4	1568.5	1567.1	1576.7	1568.5
172.5°	1584.4	1580.5	1579.1	1588.7	1580.5
175°	1594.1	1590.1	1587.3	1596.9	1588.7
177.5°	1599.3	1595.5	1592.6	1600.7	1592.6
180°	1596.9	1596.9	1596.9	1596.9	1596.9

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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	13.17	14.17	13.96	14.98	15.97	9.14	10.14	9.93	10.95	11.94
	3H	14.86	15.75	15.66	16.57	17.60	10.34	11.24	11.15	12.06	13.08
	4H	15.47	16.32	16.30	17.15	18.18	10.80	11.65	11.63	12.47	13.51
	6H	15.90	16.68	16.74	17.52	18.56	11.13	11.91	11.97	12.75	13.79
	8H	16.03	16.77	16.88	17.63	18.68	11.23	11.97	12.07	12.82	13.87
	12H	16.10	16.81	16.95	17.65	18.73	11.28	11.98	12.13	12.83	13.90
4H	2H	13.20	14.05	14.03	14.88	15.91	9.76	10.60	10.58	11.43	12.46
	3H	15.05	15.75	15.89	16.61	17.66	11.12	11.82	11.96	12.69	13.73
	4H	15.75	16.39	16.60	17.25	18.32	11.68	12.31	12.53	13.17	14.25
	6H	16.27	16.82	17.14	17.71	18.79	12.11	12.66	12.98	13.54	14.62
	8H	16.45	16.96	17.32	17.84	18.94	12.24	12.75	13.11	13.63	14.73
	12H	16.55	17.01	17.44	17.91	19.01	12.31	12.77	13.20	13.67	14.77
8H	4H	15.73	16.24	16.60	17.12	18.21	11.97	12.48	12.84	13.36	14.46
	6H	16.30	16.72	17.20	17.65	18.74	12.50	12.92	13.39	13.84	14.93
	8H	16.52	16.89	17.43	17.81	18.92	12.69	13.06	13.60	13.98	15.09
	12H	16.66	17.00	17.58	17.90	19.06	12.82	13.15	13.73	14.05	15.22
12H	4H	15.69	16.15	16.58	17.05	18.15	11.98	12.44	12.87	13.34	14.44
	6H	16.28	16.65	17.19	17.57	18.68	12.55	12.92	13.45	13.84	14.95
	8H	16.50	16.84	17.42	17.74	18.91	12.76	13.10	13.68	14.00	15.17