

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: P923385

Luminaire Tested: DFN2DIP-TR2F0-030D040US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923385
REPORT IS A COMBINATION OF REPORTS P901763 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-030D040US940-FLLONL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

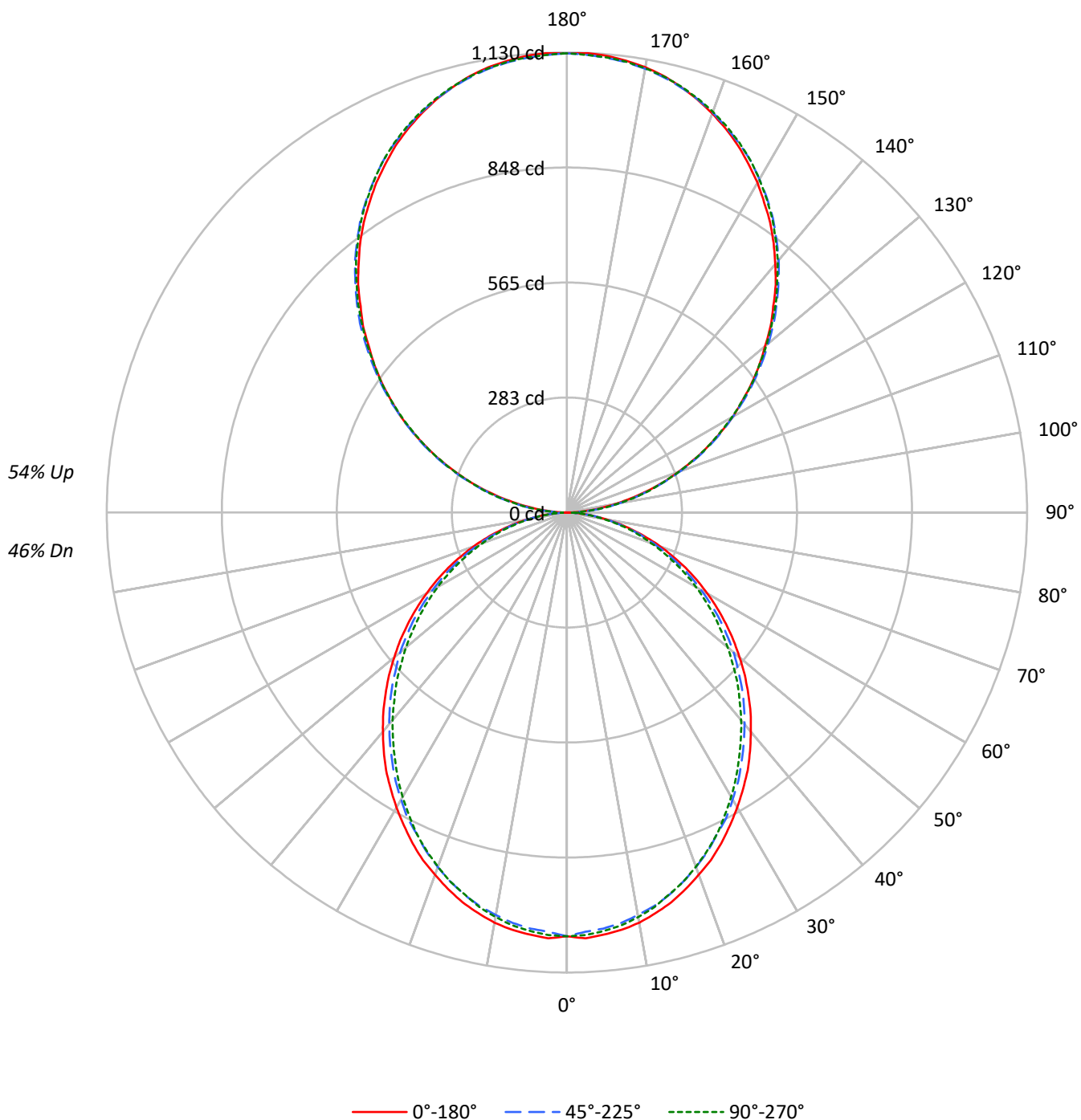
Lumens per Lamp: N/A
Luminaire Lumens: 5805.0 lumens
Efficiency: N/A
Efficacy: 106.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 54.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P923385

CATALOG NUMBER: DFN2DIP-TR2F0-030D040US940-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P923385

CATALOG NUMBER: DFN2DIP-TR2F0-030D040US940-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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52
1	97	93	89	85	89	85	82	79	71	69	66	58	56	55	46	45	44
2	88	81	75	70	81	74	69	65	62	58	55	51	48	46	41	39	37
3	80	71	64	58	73	65	59	54	55	50	46	45	42	39	36	34	32
4	74	63	55	49	67	58	51	46	49	43	39	40	36	33	32	29	27
5	67	56	48	42	62	52	45	39	44	38	34	36	32	29	29	26	24
6	62	50	42	36	57	46	39	34	39	34	30	33	28	25	26	23	21
7	57	45	37	32	53	42	35	30	36	30	26	30	25	22	24	21	19
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	17
9	50	37	30	25	45	35	28	24	30	24	21	25	21	18	20	17	15
10	46	34	27	22	42	32	25	21	27	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2322	2322	2322
5°	2322	2284	2301
10°	2300	2248	2266
15°	2262	2206	2213
20°	2213	2149	2159
25°	2164	2083	2098
30°	2104	2021	2021
35°	2046	1948	1939
40°	1976	1874	1862
45°	1905	1800	1782
50°	1828	1722	1690
55°	1747	1632	1605
60°	1655	1526	1507
65°	1555	1415	1391
70°	1426	1281	1266
75°	1251	1119	1146
80°	1037	912	926
85°	707	576	574

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1905 cd/sqm

TEST NUMBER: P923385

CATALOG NUMBER: DFN2DIP-TR2F0-030D040US940-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	98.0	1.7
10°-20°	275.6	4.7
20°-30°	405.1	7.0
30°-40°	470.5	8.1
40°-50°	469.9	8.1
50°-60°	409.8	7.1
60°-70°	302.9	5.2
70°-80°	171.4	3.0
80°-90°	48.4	0.8
90°-100°	69.8	1.2
100°-110°	221.8	3.8
110°-120°	379.5	6.5
120°-130°	499.2	8.6
130°-140°	560.3	9.7
140°-150°	549.4	9.5
150°-160°	460.9	7.9
160°-170°	305.7	5.3
170°-180°	106.8	1.8
0°-30°	778.7	13.4
0°-40°	1249.2	21.5
0°-60°	2128.9	36.7
0°-90°	2651.6	45.7
90°-120°	671.2	11.6
90°-150°	2280.1	39.3
90°-180°	3153.0	54.3
0°-180°	5805.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1041	1041	1041	1041	1041	
5°	1041	1037	1026	1034	1032	99
15°	991	985	972	976	971	279
25°	897	889	872	874	872	413
35°	774	764	748	742	737	483
45°	630	623	608	597	592	486
55°	476	470	458	446	442	426
65°	321	315	305	296	291	318
75°	168	166	161	155	157	179
85°	41	40	39	36	35	46
90°	1	12	33	31	32	6
95°	50	59	61	61	59	55
105°	205	207	210	211	211	216
115°	381	386	385	384	381	377
125°	554	562	560	557	556	495
135°	717	727	729	728	725	554
145°	870	877	882	883	880	544
155°	995	998	1000	1005	1002	458
165°	1082	1081	1081	1088	1083	305
175°	1126	1123	1121	1128	1122	107
180°	1128	1128	1128	1128	1128	

TEST NUMBER: P923385

CATALOG NUMBER: DFN2DIP-TR2F0-030D040US940-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1040.9	1040.9	1040.9	1040.9	1040.9
2.5°	1047.0	1042.0	1030.9	1040.9	1039.0
5°	1040.9	1037.0	1025.9	1033.9	1032.0
7.5°	1033.9	1028.0	1016.9	1025.0	1023.0
10°	1023.0	1015.9	1004.0	1011.9	1009.0
12.5°	1007.9	1001.9	990.0	994.9	992.9
15°	990.9	985.0	971.9	975.9	970.9
17.5°	969.8	963.9	950.8	955.8	950.8
20°	946.8	940.8	926.8	929.8	925.9
22.5°	923.9	914.9	901.8	901.8	899.7
25°	896.8	888.9	871.8	873.8	871.8
27.5°	866.7	859.7	846.8	843.8	838.8
30°	836.8	828.8	813.8	810.7	806.7
32.5°	804.8	798.8	782.7	776.7	772.7
35°	773.7	763.7	747.7	741.6	736.6
37.5°	738.7	729.7	713.6	706.6	701.6
40°	702.7	694.6	678.6	669.7	665.7
42.5°	667.6	659.6	643.6	633.6	627.6
45°	629.6	622.6	607.5	596.6	592.5
47.5°	592.5	585.6	569.5	558.5	552.5
50°	553.5	548.5	534.5	520.5	515.5
52.5°	515.5	508.5	495.5	484.5	477.4
55°	476.5	470.5	458.4	446.5	441.5
57.5°	437.4	432.4	419.4	407.3	403.3
60°	398.3	394.4	380.4	369.3	366.4
62.5°	360.3	353.3	343.3	333.3	329.3
65°	321.4	315.3	305.3	296.3	291.3
67.5°	281.3	276.3	267.2	260.3	256.3
70°	244.2	240.2	231.2	224.2	220.3
72.5°	206.3	202.2	197.2	190.2	187.3
75°	168.1	166.2	161.1	155.2	157.2
77.5°	134.1	130.1	128.0	125.1	122.2
80°	100.1	99.1	97.0	94.1	92.1
82.5°	68.0	68.0	67.1	63.0	63.0
85°	41.0	40.0	39.1	36.0	35.0
87.5°	18.0	16.1	14.0	11.1	10.0
90°	1.0	12.2	33.3	31.3	32.3
92.5°	21.0	28.5	29.6	30.6	30.6
95°	49.7	59.2	60.9	60.9	59.2
97.5°	82.7	91.5	95.2	95.2	95.2
100°	120.7	128.6	131.3	131.3	130.3
102.5°	160.9	166.7	170.4	171.4	170.4
105°	204.7	207.4	209.5	211.2	211.2
107.5°	248.3	252.4	252.4	253.0	248.3
110°	290.4	295.9	295.9	295.9	293.2

TEST NUMBER: P923385

CATALOG NUMBER: DFN2DIP-TR2F0-030D040US940-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	336.0	341.8	340.7	338.0	336.0
115°	380.8	386.4	384.6	383.6	380.8
117.5°	425.4	432.9	428.2	425.4	422.8
120°	470.4	477.8	470.4	470.4	467.3
122.5°	511.1	520.7	515.9	513.2	511.1
125°	554.0	562.5	559.8	556.7	555.7
127.5°	595.8	606.4	602.6	598.5	595.8
130°	634.9	647.2	645.5	643.5	639.7
132.5°	678.8	688.3	689.0	684.2	681.5
135°	716.6	727.1	729.2	728.1	725.4
137.5°	758.8	767.2	768.9	768.2	764.2
140°	795.8	804.3	809.0	809.0	805.3
142.5°	833.9	842.4	845.1	846.1	842.4
145°	870.0	876.7	882.2	883.2	879.5
147.5°	902.2	910.7	914.8	916.5	912.8
150°	935.6	941.4	945.1	948.2	945.1
152.5°	965.2	970.9	975.7	979.5	975.7
155°	994.7	997.5	1000.5	1005.3	1002.2
157.5°	1020.3	1022.3	1024.0	1030.8	1026.0
160°	1043.0	1045.1	1046.1	1051.9	1047.8
162.5°	1064.1	1064.1	1065.1	1071.6	1066.8
165°	1082.2	1081.1	1081.1	1087.9	1083.2
167.5°	1098.5	1095.4	1095.4	1102.2	1097.4
170°	1110.7	1108.0	1107.0	1113.7	1108.0
172.5°	1119.2	1116.5	1115.4	1122.3	1116.5
175°	1126.1	1123.3	1121.2	1128.0	1122.3
177.5°	1129.8	1127.0	1125.0	1130.8	1125.0
180°	1128.0	1128.0	1128.0	1128.0	1128.0

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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	9.65	10.48	10.65	11.48	12.81	9.23	10.05	10.22	11.06	12.39
	3H	11.29	12.03	12.29	13.04	14.39	10.83	11.57	11.83	12.58	13.93
	4H	11.86	12.56	12.88	13.58	14.94	11.40	12.10	12.42	13.12	14.48
	6H	12.24	12.88	13.27	13.90	15.28	11.78	12.42	12.81	13.44	14.82
	8H	12.33	12.95	13.37	13.98	15.35	11.87	12.49	12.91	13.53	14.89
	12H	12.37	12.95	13.41	13.99	15.38	11.91	12.49	12.95	13.52	14.92
4H	2H	10.10	10.80	11.13	11.82	13.18	9.76	10.46	10.79	11.48	12.84
	3H	11.94	12.52	12.97	13.57	14.94	11.55	12.14	12.59	13.18	14.56
	4H	12.63	13.17	13.67	14.20	15.60	12.24	12.77	13.28	13.81	15.21
	6H	13.12	13.58	14.17	14.64	16.03	12.73	13.19	13.78	14.25	15.64
	8H	13.26	13.69	14.31	14.74	16.15	12.86	13.29	13.91	14.35	15.75
	12H	13.32	13.71	14.39	14.78	16.19	12.91	13.30	13.98	14.37	15.78
8H	4H	12.81	13.24	13.86	14.30	15.71	12.46	12.89	13.51	13.95	15.35
	6H	13.42	13.77	14.49	14.87	16.27	13.07	13.42	14.14	14.52	15.92
	8H	13.62	13.93	14.70	15.01	16.44	13.26	13.58	14.35	14.66	16.08
	12H	13.74	14.01	14.82	15.08	16.55	13.37	13.64	14.45	14.72	16.18
12H	4H	12.80	13.18	13.86	14.25	15.67	12.45	12.84	13.52	13.91	15.32
	6H	13.44	13.75	14.52	14.83	16.26	13.10	13.41	14.18	14.49	15.92
	8H	13.66	13.94	14.75	15.01	16.48	13.32	13.59	14.40	14.67	16.13