

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: P917960

Luminaire Tested: DFN2DIP-TR2F0-050D020US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917960
REPORT IS A COMBINATION OF REPORTS P900227 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-050D020US930-FLLFLL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

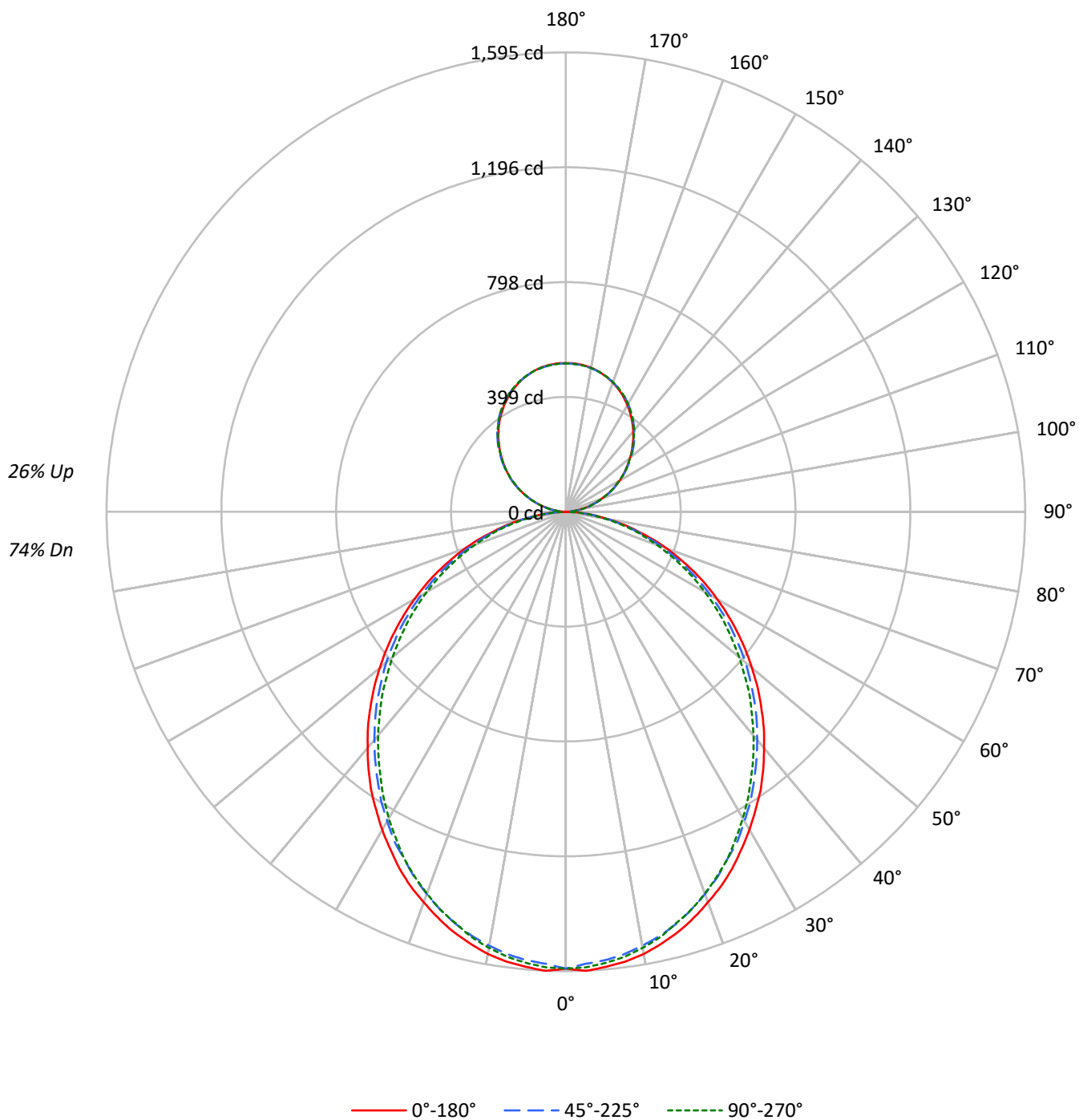
Lumens per Lamp: N/A
Luminaire Lumens: 5478.8 lumens
Efficiency: N/A
Efficacy: 87.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 62.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P917960

CATALOG NUMBER: DFN2DIP-TR2F0-050D020US930-FLLFLL

Luminous Intensity Polar Plot



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CATALOG NUMBER: DFN2DIP-TR2F0-050D020US930-FLLFLL

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	96	96	96	87	87	87	78	78	78
1	103	99	95	91	98	94	90	87	85	82	80	77	74	72	69	67	66
2	94	86	80	74	89	82	76	71	74	70	66	67	64	61	61	58	55
3	86	76	68	62	81	72	65	60	66	60	55	59	55	51	54	50	47
4	79	67	59	53	74	64	57	51	58	52	47	53	48	44	48	44	41
5	72	60	52	45	68	57	50	44	52	46	41	48	42	38	43	39	36
6	67	54	46	40	63	52	44	38	47	41	36	43	38	34	39	35	31
7	62	49	41	35	58	47	39	34	43	37	32	39	34	30	36	31	28
8	57	45	37	31	54	43	35	30	39	33	28	36	31	27	33	29	25
9	54	41	33	28	51	39	32	27	36	30	26	33	28	24	31	26	23
10	50	38	30	25	48	36	29	24	33	27	23	31	26	22	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3538	3538	3538
5°	3538	3480	3506
10°	3504	3426	3452
15°	3447	3362	3372
20°	3373	3275	3291
25°	3298	3174	3197
30°	3206	3079	3079
35°	3118	2968	2955
40°	3011	2856	2837
45°	2903	2743	2715
50°	2786	2624	2575
55°	2662	2487	2445
60°	2523	2326	2296
65°	2369	2157	2120
70°	2174	1951	1930
75°	1906	1705	1745
80°	1580	1391	1411
85°	1078	876	876

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2903 cd/sqm

TEST NUMBER: P917960

CATALOG NUMBER: DFN2DIP-TR2F0-050D020US930-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.3	2.7
10°-20°	420.0	7.7
20°-30°	617.3	11.3
30°-40°	717.0	13.1
40°-50°	716.1	13.1
50°-60°	624.4	11.4
60°-70°	461.6	8.4
70°-80°	261.1	4.8
80°-90°	70.4	1.3
90°-100°	31.9	0.6
100°-110°	101.4	1.9
110°-120°	173.5	3.2
120°-130°	228.2	4.2
130°-140°	256.1	4.7
140°-150°	251.2	4.6
150°-160°	210.7	3.8
160°-170°	139.7	2.6
170°-180°	48.8	0.9
0°-30°	1186.6	21.7
0°-40°	1903.6	34.7
0°-60°	3244.1	59.2
0°-90°	4037.2	73.7
90°-120°	306.8	5.6
90°-150°	1042.3	19.0
90°-180°	1442.0	26.3
0°-180°	5478.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1586	1586	1586	1586	1586	
5°	1586	1580	1563	1576	1573	151
15°	1510	1501	1481	1487	1480	425
25°	1367	1354	1328	1332	1328	629
35°	1179	1164	1139	1130	1123	736
45°	959	949	926	909	903	740
55°	726	717	698	680	673	649
65°	490	480	465	452	444	484
75°	256	253	246	236	240	273
85°	62	61	60	55	53	70
90°	0	6	15	14	15	5
95°	23	27	28	28	27	25
105°	94	95	96	96	96	99
115°	174	177	176	175	174	172
125°	253	257	256	254	254	226
135°	328	332	333	333	332	253
145°	398	401	403	404	402	248
155°	455	456	457	460	458	209
165°	495	494	494	497	495	140
175°	515	514	513	516	513	49
180°	516	516	516	516	516	

TEST NUMBER: P917960

CATALOG NUMBER: DFN2DIP-TR2F0-050D020US930-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1586.2	1586.2	1586.2	1586.2	1586.2
2.5°	1595.4	1587.8	1571.0	1586.2	1583.3
5°	1586.2	1580.2	1563.3	1575.5	1572.6
7.5°	1575.5	1566.4	1549.6	1561.9	1558.9
10°	1558.9	1548.2	1529.9	1542.0	1537.5
12.5°	1535.9	1526.8	1508.5	1516.1	1513.0
15°	1509.9	1500.9	1481.0	1487.2	1479.5
17.5°	1477.9	1468.8	1448.9	1456.5	1448.9
20°	1442.8	1433.8	1412.4	1416.9	1411.0
22.5°	1407.9	1394.1	1374.2	1374.2	1371.1
25°	1366.6	1354.5	1328.5	1331.5	1328.5
27.5°	1320.8	1310.1	1290.4	1285.8	1278.2
30°	1275.1	1262.9	1240.1	1235.5	1229.4
32.5°	1226.3	1217.2	1192.8	1183.6	1177.5
35°	1179.0	1163.8	1139.4	1130.2	1122.6
37.5°	1125.6	1111.9	1087.4	1076.8	1069.2
40°	1070.8	1058.5	1034.0	1020.4	1014.3
42.5°	1017.4	1005.1	980.8	965.4	956.3
45°	959.4	948.8	925.8	909.1	902.9
47.5°	902.9	892.3	867.9	851.0	842.0
50°	843.4	835.8	814.5	793.1	785.5
52.5°	785.5	774.8	755.0	738.3	727.6
55°	726.1	716.9	698.5	680.3	672.7
57.5°	666.5	658.9	639.0	620.8	614.6
60°	607.0	601.0	579.7	562.8	558.3
62.5°	549.1	538.4	523.2	507.9	501.8
65°	489.7	480.5	465.2	451.5	443.8
67.5°	428.7	420.9	407.3	396.6	390.4
70°	372.2	366.1	352.3	341.6	335.7
72.5°	314.3	308.1	300.5	289.8	285.3
75°	256.2	253.2	245.5	236.4	239.5
77.5°	204.4	198.2	195.2	190.6	186.1
80°	152.6	151.0	147.9	143.4	140.3
82.5°	103.7	103.7	102.2	96.1	96.1
85°	62.5	61.0	59.5	54.9	53.4
87.5°	27.5	24.5	21.4	16.8	15.2
90°	0.5	5.6	15.2	14.3	14.8
92.5°	9.6	13.0	13.5	14.0	14.0
95°	22.7	27.1	27.8	27.8	27.1
97.5°	37.7	41.8	43.5	43.5	43.5
100°	55.2	58.8	60.0	60.0	59.5
102.5°	73.5	76.1	77.9	78.4	77.9
105°	93.6	94.8	95.8	96.5	96.5
107.5°	113.5	115.4	115.4	115.7	113.5
110°	132.8	135.3	135.3	135.3	134.0



TEST NUMBER: P917960

CATALOG NUMBER: DFN2DIP-TR2F0-050D020US930-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	153.6	156.2	155.8	154.5	153.6
115°	174.1	176.6	175.9	175.4	174.1
117.5°	194.5	198.0	195.8	194.5	193.2
120°	215.0	218.4	215.0	215.0	213.6
122.5°	233.7	238.0	235.9	234.6	233.7
125°	253.2	257.1	255.9	254.5	254.0
127.5°	272.4	277.2	275.5	273.6	272.4
130°	290.2	295.9	295.1	294.2	292.4
132.5°	310.3	314.7	314.9	312.8	311.5
135°	327.6	332.4	333.3	332.9	331.6
137.5°	346.8	350.7	351.6	351.2	349.4
140°	363.8	367.7	369.9	369.9	368.2
142.5°	381.2	385.1	386.4	386.8	385.1
145°	397.7	400.8	403.3	403.7	402.0
147.5°	412.5	416.4	418.2	419.0	417.3
150°	427.7	430.3	432.0	433.4	432.0
152.5°	441.2	443.8	446.0	447.8	446.0
155°	454.8	456.0	457.4	459.6	458.2
157.5°	466.4	467.3	468.1	471.2	469.0
160°	476.9	477.8	478.3	480.9	479.0
162.5°	486.5	486.5	486.9	489.9	487.7
165°	494.7	494.2	494.2	497.3	495.2
167.5°	502.1	500.8	500.8	503.9	501.7
170°	507.8	506.5	506.1	509.2	506.5
172.5°	511.7	510.4	510.0	513.1	510.4
175°	514.8	513.6	512.6	515.7	513.1
177.5°	516.5	515.3	514.3	516.9	514.3
180°	515.7	515.7	515.7	515.7	515.7

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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	13.48	14.60	14.20	15.35	16.24	13.06	14.18	13.78	14.93	15.81
	3H	15.14	16.15	15.87	16.90	17.82	14.68	15.69	15.41	16.44	17.36
	4H	15.72	16.67	16.48	17.44	18.37	15.26	16.21	16.02	16.98	17.91
	6H	16.12	17.00	16.88	17.77	18.71	15.66	16.54	16.42	17.31	18.25
	8H	16.22	17.06	17.00	17.85	18.80	15.76	16.60	16.54	17.39	18.34
	12H	16.27	17.07	17.05	17.85	18.83	15.80	16.60	16.59	17.39	18.36
4H	2H	13.96	14.92	14.72	15.68	16.61	13.63	14.58	14.38	15.34	16.27
	3H	15.83	16.62	16.60	17.42	18.37	15.44	16.24	16.21	17.04	17.99
	4H	16.53	17.26	17.32	18.06	19.03	16.14	16.86	16.92	17.66	18.64
	6H	17.04	17.67	17.84	18.49	19.47	16.64	17.27	17.45	18.09	19.08
	8H	17.18	17.77	17.99	18.59	19.59	16.79	17.37	17.59	18.19	19.19
	12H	17.26	17.79	18.09	18.63	19.63	16.85	17.38	17.68	18.22	19.22
8H	4H	16.74	17.33	17.55	18.15	19.14	16.39	16.97	17.20	17.79	18.79
	6H	17.35	17.84	18.19	18.70	19.70	17.00	17.49	17.84	18.35	19.35
	8H	17.56	17.99	18.41	18.85	19.86	17.20	17.64	18.05	18.50	19.51
	12H	17.69	18.07	18.54	18.92	19.99	17.32	17.70	18.17	18.55	19.62
12H	4H	16.74	17.26	17.56	18.10	19.11	16.39	16.92	17.22	17.76	18.76
	6H	17.38	17.81	18.23	18.67	19.68	17.04	17.47	17.89	18.33	19.34
	8H	17.62	18.00	18.47	18.85	19.92	17.27	17.65	18.12	18.50	19.57