

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: P918329

Luminaire Tested: DFN2DIP-TR4F0-080D040US930-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918329
REPORT IS A COMBINATION OF REPORTS P901898 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-080D040US930-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

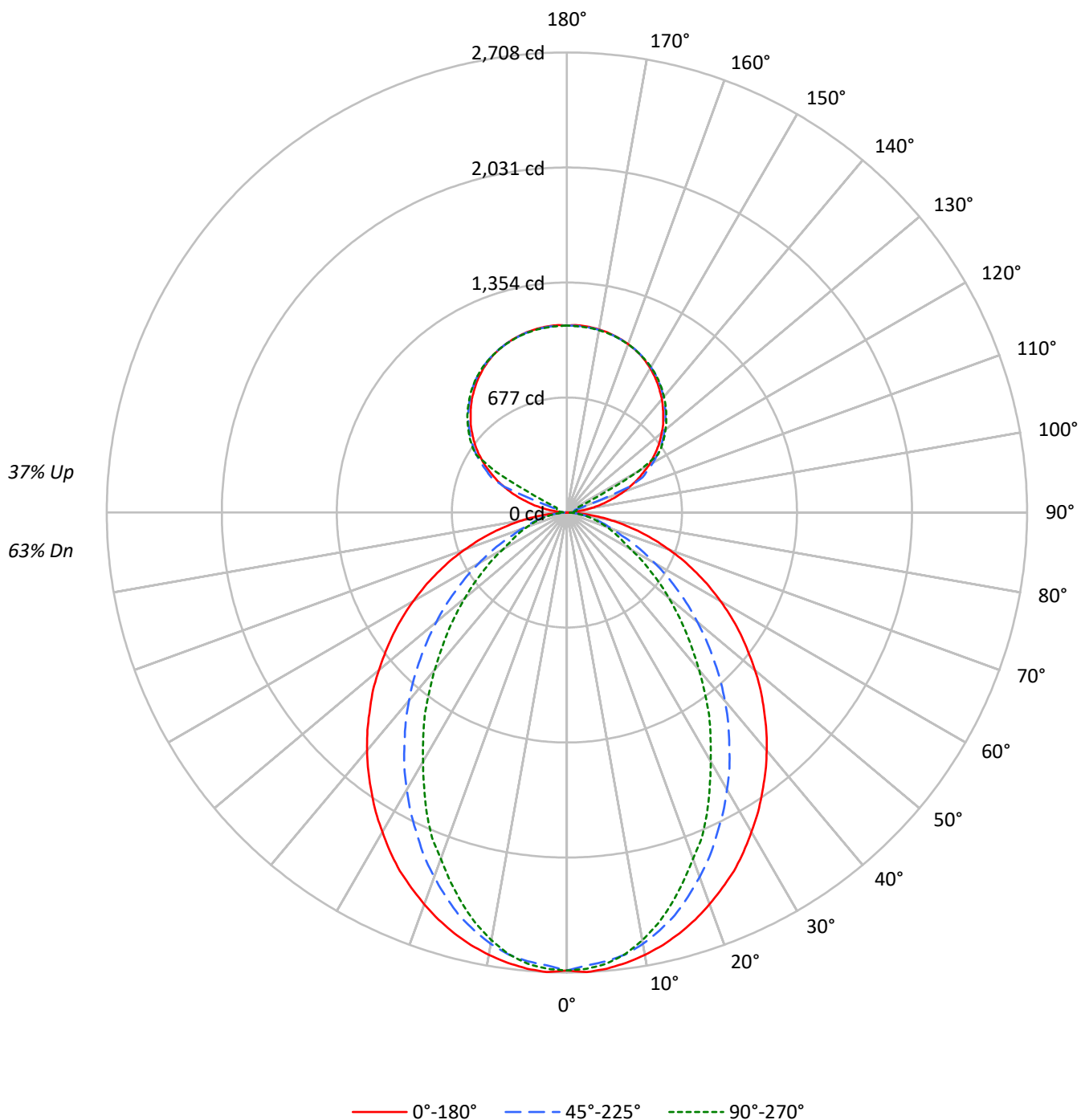
Lumens per Lamp: N/A
Luminaire Lumens: 8772.6 lumens
Efficiency: N/A
Efficacy: 83.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 105.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	52	51
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2142	2142	2142
5°	2145	2108	2121
10°	2124	2066	2052
15°	2095	1998	1945
20°	2056	1904	1814
25°	2016	1798	1688
30°	1963	1690	1527
35°	1911	1574	1386
40°	1858	1453	1225
45°	1796	1320	1079
50°	1733	1185	935
55°	1666	1041	798
60°	1589	890	657
65°	1501	737	591
70°	1393	594	535
75°	1259	524	487
80°	1064	439	422
85°	741	293	316

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1796 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	252.6	2.9
10°-20°	693.6	7.9
20°-30°	973.7	11.1
30°-40°	1061.4	12.1
40°-50°	975.6	11.1
50°-60°	766.2	8.7
60°-70°	498.7	5.7
70°-80°	256.7	2.9
80°-90°	67.5	0.8
90°-100°	36.3	0.4
100°-110°	135.3	1.5
110°-120°	358.8	4.1
120°-130°	595.1	6.8
130°-140°	632.1	7.2
140°-150°	587.5	6.7
150°-160°	472.3	5.4
160°-170°	304.4	3.5
170°-180°	104.8	1.2
0°-30°	1919.9	21.9
0°-40°	2981.4	34.0
0°-60°	4723.1	53.8
0°-90°	5546.0	63.2
90°-120°	530.4	6.0
90°-150°	2345.2	26.7
90°-180°	3227.0	36.8
0°-180°	8772.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2696	2696	2696	2696	2696	
5°	2696	2684	2652	2674	2666	256
15°	2564	2537	2454	2408	2384	722
25°	2327	2249	2088	1988	1952	1070
35°	2005	1881	1666	1513	1459	1255
45°	1639	1476	1220	1046	988	1266
55°	1246	1056	793	646	600	1114
65°	842	644	424	342	334	834
75°	449	278	195	178	176	475
85°	105	54	46	46	46	120
90°	1	10	16	20	21	8
95°	52	25	31	35	34	61
105°	242	266	49	57	60	259
115°	458	471	491	123	65	451
125°	647	658	673	679	681	577
135°	801	814	821	829	828	619
145°	929	929	942	948	944	581
155°	1023	1016	1026	1030	1024	472
165°	1078	1074	1076	1082	1076	305
175°	1103	1097	1099	1105	1097	105
180°	1101	1101	1101	1101	1101	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2695.7	2695.7	2695.7	2695.7	2695.7
2.5°	2707.9	2695.7	2668.8	2693.3	2688.4
5°	2695.7	2683.6	2651.7	2673.7	2666.4
7.5°	2673.7	2659.2	2625.0	2634.6	2622.4
10°	2644.4	2627.4	2578.7	2571.2	2556.7
12.5°	2608.0	2586.0	2519.9	2505.4	2478.5
15°	2563.9	2537.0	2454.2	2407.9	2383.5
17.5°	2512.7	2473.6	2371.1	2317.6	2278.4
20°	2454.2	2405.3	2283.4	2222.6	2168.7
22.5°	2390.8	2334.6	2193.1	2110.2	2073.7
25°	2327.4	2249.2	2088.2	1988.3	1951.6
27.5°	2251.8	2168.7	1990.6	1876.0	1819.8
30°	2171.3	2078.4	1883.3	1759.0	1693.0
32.5°	2093.1	1980.8	1781.0	1634.5	1573.4
35°	2005.4	1880.9	1666.3	1512.6	1458.7
37.5°	1919.9	1785.7	1558.9	1390.4	1329.6
40°	1829.7	1683.4	1446.6	1273.4	1210.0
42.5°	1737.0	1580.9	1334.5	1153.9	1093.0
45°	1639.4	1475.9	1219.8	1046.4	988.0
47.5°	1546.8	1373.6	1110.1	936.7	883.1
50°	1444.2	1271.1	1002.7	834.2	783.2
52.5°	1344.1	1161.1	900.2	739.2	692.9
55°	1246.5	1056.3	792.8	646.5	600.2
57.5°	1146.6	951.5	697.8	561.2	522.0
60°	1044.1	849.0	597.6	473.4	434.3
62.5°	944.2	749.0	512.3	395.3	375.9
65°	841.7	643.9	424.4	341.7	334.1
67.5°	744.1	546.4	341.7	299.9	292.8
70°	641.6	451.4	282.9	258.5	248.7
72.5°	544.0	363.4	236.6	217.2	212.2
75°	448.8	278.0	195.2	178.1	175.8
77.5°	353.8	197.5	153.8	143.9	139.0
80°	265.8	141.6	117.0	107.4	107.4
82.5°	185.3	95.2	80.5	75.6	75.6
85°	104.8	53.6	46.3	46.3	46.3
87.5°	39.1	19.4	19.4	17.1	17.1
90°	0.7	9.5	15.9	20.0	21.4
92.5°	20.0	16.7	19.1	20.7	21.4
95°	51.7	25.4	31.0	35.1	34.2
97.5°	93.2	27.9	40.6	43.0	43.8
100°	141.0	31.9	45.4	51.7	53.3
102.5°	193.5	192.0	47.0	55.7	58.1
105°	242.1	266.0	48.6	57.3	60.5
107.5°	298.6	318.5	50.2	58.9	62.1
110°	352.9	369.5	139.4	59.8	62.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	403.8	418.1	404.6	61.3	63.8
115°	457.9	471.4	491.4	122.6	65.4
117.5°	504.9	520.8	534.4	420.4	211.8
120°	557.5	569.4	583.8	593.4	485.8
122.5°	602.0	614.8	630.8	635.5	636.3
125°	647.4	657.9	672.9	678.6	680.9
127.5°	688.8	700.0	712.0	720.0	720.7
130°	727.9	740.7	749.3	758.1	757.4
132.5°	767.7	778.1	786.8	794.0	793.3
135°	801.2	814.0	821.1	829.1	827.5
137.5°	836.2	845.7	853.8	861.7	859.3
140°	870.4	876.9	885.6	892.8	888.8
142.5°	899.2	904.7	915.1	921.4	917.5
145°	929.4	928.6	942.1	947.7	943.7
147.5°	955.6	953.2	966.8	970.8	967.7
150°	981.1	975.6	988.4	993.1	989.1
152.5°	1002.7	996.3	1008.2	1013.0	1007.5
155°	1023.4	1016.3	1025.8	1030.5	1024.2
157.5°	1040.1	1033.7	1041.0	1046.5	1040.1
160°	1054.4	1049.6	1054.4	1059.2	1053.6
162.5°	1067.1	1062.4	1066.4	1072.0	1064.8
165°	1078.3	1073.6	1075.9	1081.5	1075.9
167.5°	1087.1	1082.2	1084.8	1090.3	1083.1
170°	1094.3	1089.5	1091.0	1096.7	1089.5
172.5°	1099.0	1094.3	1095.9	1101.5	1094.3
175°	1102.9	1097.4	1099.0	1104.6	1096.7
177.5°	1104.6	1099.0	1099.8	1105.5	1098.3
180°	1100.7	1100.7	1100.7	1100.7	1100.7

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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	10.94	11.89	11.78	12.75	13.82	6.91	7.87	7.76	8.72	9.80
	3H	12.63	13.48	13.48	14.35	15.45	8.11	8.96	8.97	9.83	10.93
	4H	13.24	14.04	14.11	14.92	16.03	8.57	9.37	9.44	10.25	11.36
	6H	13.67	14.41	14.55	15.29	16.41	8.90	9.64	9.78	10.52	11.64
	8H	13.80	14.50	14.69	15.40	16.52	8.99	9.69	9.88	10.59	11.72
	12H	13.86	14.53	14.76	15.43	16.57	9.04	9.71	9.94	10.60	11.75
4H	2H	10.97	11.78	11.85	12.65	13.76	7.52	8.33	8.40	9.20	10.31
	3H	12.81	13.48	13.70	14.39	15.51	8.89	9.55	9.77	10.46	11.58
	4H	13.51	14.12	14.41	15.02	16.17	9.44	10.05	10.34	10.95	12.10
	6H	14.03	14.55	14.94	15.48	16.64	9.87	10.39	10.78	11.32	12.47
	8H	14.21	14.70	15.12	15.62	16.78	10.00	10.49	10.91	11.41	12.57
	12H	14.31	14.75	15.24	15.69	16.86	10.07	10.51	11.00	11.45	12.62
8H	4H	13.49	13.97	14.40	14.90	16.06	9.73	10.22	10.64	11.14	12.30
	6H	14.06	14.46	15.00	15.42	16.59	10.25	10.65	11.19	11.62	12.78
	8H	14.27	14.63	15.23	15.59	16.77	10.44	10.80	11.40	11.76	12.94
	12H	14.42	14.73	15.37	15.68	16.91	10.57	10.88	11.52	11.83	13.06
12H	4H	13.44	13.88	14.38	14.82	16.00	9.74	10.18	10.67	11.12	12.29
	6H	14.03	14.39	14.98	15.35	16.53	10.30	10.66	11.25	11.61	12.80
	8H	14.26	14.57	15.21	15.52	16.75	10.52	10.83	11.47	11.78	13.01