

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: P910289

Luminaire Tested: DFN2DIP-TR4F0-120D040US840-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910289
REPORT IS A COMBINATION OF REPORTS P901906 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-120D040US840-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

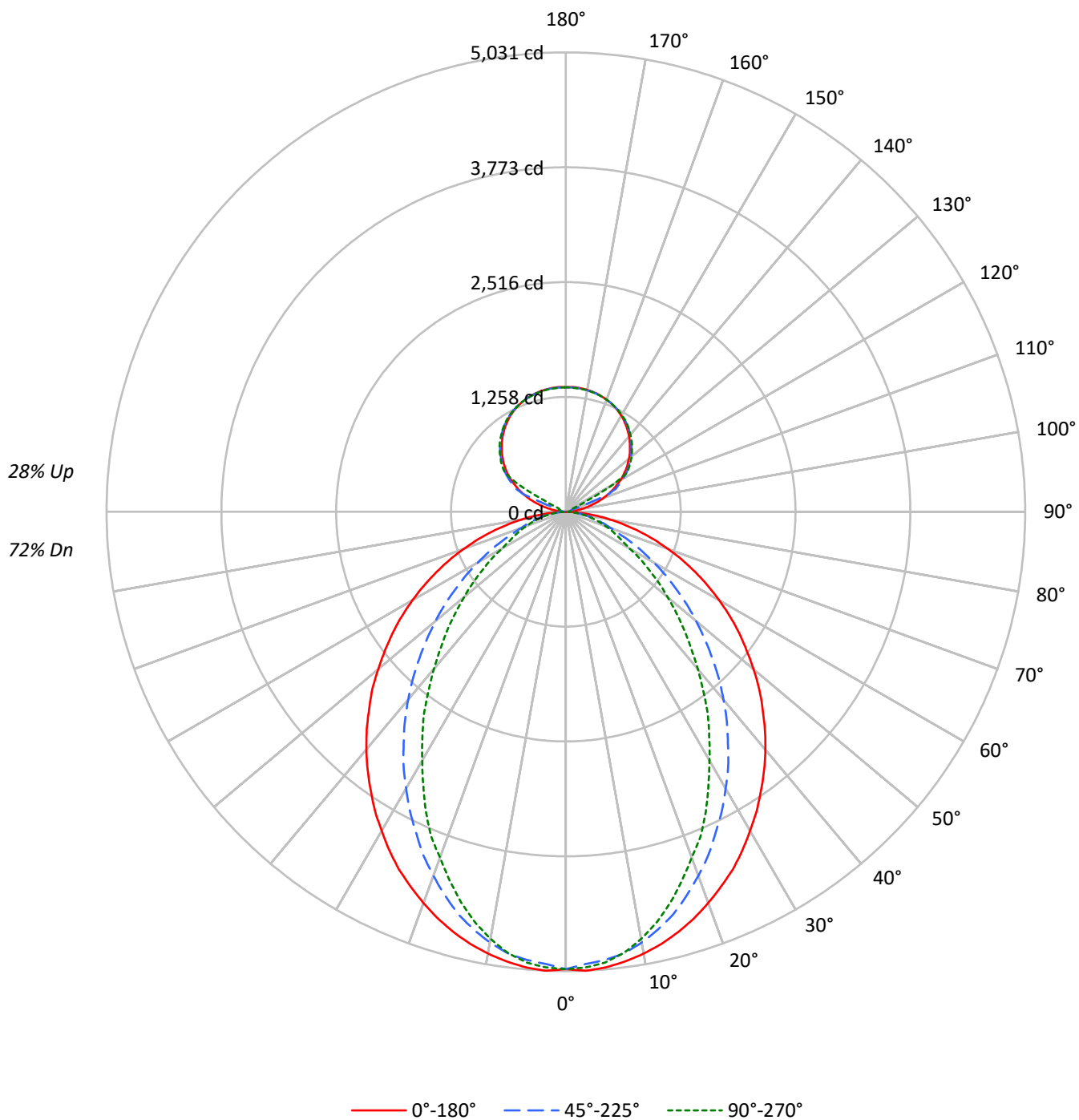
Lumens per Lamp: N/A
Luminaire Lumens: 14299.6 lumens
Efficiency: N/A
Efficacy: 91.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 156
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
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	112	112	112	112	107	107	107	107	96	96	96	86	86	86	76	76	76
1	103	99	95	92	98	94	91	88	85	82	80	76	75	73	69	67	66
2	95	87	81	76	90	83	78	73	75	71	68	68	65	62	61	59	57
3	87	78	70	65	82	74	67	62	67	62	58	61	57	53	55	52	49
4	80	69	61	55	76	66	59	54	60	54	50	55	50	46	50	46	43
5	74	62	54	48	70	59	52	47	54	48	44	50	45	41	45	41	38
6	68	56	48	42	65	54	46	41	49	43	39	45	40	36	41	37	34
7	63	51	43	38	60	49	42	36	45	39	34	41	36	32	38	34	30
8	59	47	39	34	56	45	38	33	41	35	31	38	33	29	35	31	27
9	55	43	35	30	52	41	34	30	38	32	28	35	30	26	32	28	25
10	52	40	32	28	49	38	31	27	35	29	25	33	28	24	30	26	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3979	3979	3979
5°	3985	3916	3941
10°	3946	3839	3812
15°	3892	3712	3614
20°	3820	3537	3371
25°	3746	3341	3136
30°	3647	3140	2838
35°	3551	2924	2576
40°	3452	2700	2276
45°	3338	2452	2004
50°	3219	2201	1738
55°	3096	1934	1483
60°	2953	1654	1221
65°	2789	1369	1098
70°	2589	1104	994
75°	2339	973	904
80°	1976	816	783
85°	1378	544	588

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3338 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	469.4	3.3
10°-20°	1288.6	9.0
20°-30°	1809.2	12.7
30°-40°	1972.1	13.8
40°-50°	1812.6	12.7
50°-60°	1423.5	10.0
60°-70°	926.6	6.5
70°-80°	476.9	3.3
80°-90°	124.2	0.9
90°-100°	44.9	0.3
100°-110°	167.6	1.2
110°-120°	444.4	3.1
120°-130°	737.1	5.2
130°-140°	783.0	5.5
140°-150°	727.7	5.1
150°-160°	585.1	4.1
160°-170°	377.0	2.6
170°-180°	129.8	0.9
0°-30°	3567.2	24.9
0°-40°	5539.3	38.7
0°-60°	8775.3	61.4
0°-90°	10303.0	72.1
90°-120°	656.9	4.6
90°-150°	2904.8	20.3
90°-180°	3997.0	28.0
0°-180°	14299.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5008	5008	5008	5008	5008	
5°	5008	4986	4927	4968	4954	475
15°	4764	4714	4560	4474	4429	1342
25°	4324	4179	3880	3694	3626	1989
35°	3726	3495	3096	2810	2710	2332
45°	3046	2742	2266	1944	1836	2352
55°	2316	1963	1473	1201	1115	2070
65°	1564	1196	789	635	621	1550
75°	834	516	363	331	326	882
85°	195	100	86	86	86	224
90°	1	12	20	25	27	14
95°	64	32	38	43	42	76
105°	300	330	60	71	75	320
115°	567	584	609	152	81	558
125°	802	815	834	840	843	715
135°	992	1008	1017	1027	1025	767
145°	1151	1150	1167	1174	1169	720
155°	1268	1259	1271	1276	1269	584
165°	1336	1330	1333	1340	1333	377
175°	1366	1359	1361	1368	1358	130
180°	1363	1363	1363	1363	1363	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5008.5	5008.5	5008.5	5008.5	5008.5
2.5°	5031.2	5008.5	4958.5	5004.2	4995.0
5°	5008.5	4985.9	4926.7	4967.6	4954.2
7.5°	4967.6	4940.7	4877.2	4895.0	4872.4
10°	4913.3	4881.6	4791.1	4777.2	4750.3
12.5°	4845.4	4804.6	4681.9	4655.1	4605.1
15°	4763.7	4713.7	4559.8	4473.7	4428.6
17.5°	4668.5	4595.9	4405.4	4306.0	4233.4
20°	4559.8	4469.0	4242.4	4129.4	4029.4
22.5°	4442.0	4337.7	4074.6	3920.7	3852.9
25°	4324.2	4178.9	3879.8	3694.2	3625.9
27.5°	4183.8	4029.4	3698.5	3485.6	3381.1
30°	4034.2	3861.6	3499.0	3268.1	3145.5
32.5°	3889.0	3680.3	3309.0	3036.9	2923.4
35°	3726.0	3494.6	3095.9	2810.4	2710.3
37.5°	3567.2	3317.7	2896.4	2583.3	2470.3
40°	3399.4	3127.8	2687.8	2366.0	2248.2
42.5°	3227.2	2937.3	2479.5	2143.8	2030.8
45°	3046.0	2742.1	2266.4	1944.3	1835.5
47.5°	2873.8	2552.1	2062.5	1740.4	1640.8
50°	2683.4	2361.7	1863.0	1549.9	1455.2
52.5°	2497.3	2157.3	1672.5	1373.4	1287.4
55°	2316.0	1962.6	1473.0	1201.2	1115.2
57.5°	2130.3	1767.8	1296.5	1042.6	970.0
60°	1940.0	1577.3	1110.3	879.6	807.0
62.5°	1754.3	1391.7	951.7	734.4	698.2
65°	1563.9	1196.5	788.7	634.8	620.9
67.5°	1382.6	1015.1	634.8	557.3	543.9
70°	1192.1	838.7	525.6	480.4	462.1
72.5°	1010.9	675.2	439.5	403.4	394.4
75°	833.8	516.4	362.6	330.8	326.5
77.5°	657.4	366.9	285.7	267.4	258.2
80°	493.9	263.1	217.3	199.5	199.5
82.5°	344.4	176.9	149.6	140.4	140.4
85°	194.8	99.6	86.0	86.0	86.0
87.5°	72.6	36.1	36.1	31.7	31.7
90°	0.9	11.8	19.7	24.7	26.6
92.5°	24.7	20.7	23.6	25.7	26.6
95°	64.0	31.5	38.4	43.4	42.4
97.5°	115.4	34.5	50.3	53.3	54.2
100°	174.6	39.5	56.2	64.0	66.0
102.5°	239.6	237.8	58.2	69.0	72.0
105°	299.8	329.5	60.2	71.0	74.9
107.5°	369.9	394.6	62.2	73.0	77.0
110°	437.1	457.7	172.7	74.0	77.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	500.2	517.9	501.1	75.9	79.0
115°	567.1	583.9	608.6	151.9	81.0
117.5°	625.4	645.1	662.0	520.8	262.4
120°	690.5	705.3	723.1	735.0	601.8
122.5°	745.7	761.5	781.3	787.2	788.2
125°	801.9	814.9	833.5	840.5	843.4
127.5°	853.2	867.1	881.9	891.8	892.7
130°	901.6	917.5	928.2	939.1	938.2
132.5°	950.9	963.8	974.6	983.5	982.6
135°	992.4	1008.2	1017.0	1026.9	1025.0
137.5°	1035.7	1047.5	1057.5	1067.3	1064.4
140°	1078.1	1086.1	1096.9	1105.8	1100.9
142.5°	1113.8	1120.6	1133.5	1141.2	1136.4
145°	1151.2	1150.2	1166.9	1173.9	1168.9
147.5°	1183.7	1180.7	1197.5	1202.4	1198.6
150°	1215.3	1208.4	1224.3	1230.1	1225.2
152.5°	1241.9	1234.1	1248.8	1254.8	1247.9
155°	1267.6	1258.8	1270.6	1276.5	1268.6
157.5°	1288.3	1280.4	1289.4	1296.3	1288.3
160°	1306.1	1300.1	1306.1	1311.9	1305.0
162.5°	1321.8	1316.0	1320.9	1327.8	1318.9
165°	1335.6	1329.8	1332.7	1339.6	1332.7
167.5°	1346.6	1340.5	1343.6	1350.5	1341.6
170°	1355.4	1349.5	1351.4	1358.4	1349.5
172.5°	1361.3	1355.4	1357.5	1364.3	1355.4
175°	1366.1	1359.3	1361.3	1368.2	1358.4
177.5°	1368.2	1361.3	1362.3	1369.3	1360.4
180°	1363.3	1363.3	1363.3	1363.3	1363.3

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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	13.79	14.84	14.54	15.61	16.53	9.77	10.81	10.51	11.58	12.50
	3H	15.49	16.42	16.25	17.20	18.15	10.97	11.91	11.73	12.69	13.64
	4H	16.10	16.99	16.88	17.77	18.74	11.43	12.32	12.21	13.10	14.06
	6H	16.54	17.35	17.33	18.14	19.12	11.76	12.58	12.56	13.37	14.35
	8H	16.67	17.44	17.47	18.26	19.23	11.86	12.64	12.66	13.45	14.43
	12H	16.74	17.48	17.55	18.28	19.28	11.91	12.65	12.72	13.46	14.46
4H	2H	13.84	14.72	14.62	15.51	16.47	10.39	11.27	11.17	12.06	13.02
	3H	15.69	16.42	16.48	17.24	18.22	11.76	12.49	12.55	13.31	14.29
	4H	16.39	17.05	17.20	17.87	18.88	12.31	12.98	13.12	13.80	14.81
	6H	16.91	17.49	17.74	18.33	19.34	12.75	13.32	13.57	14.16	15.18
	8H	17.09	17.63	17.92	18.47	19.49	12.88	13.42	13.71	14.26	15.28
	12H	17.20	17.68	18.05	18.54	19.57	12.96	13.44	13.81	14.30	15.33
8H	4H	16.37	16.91	17.20	17.74	18.77	12.61	13.15	13.44	13.99	15.01
	6H	16.94	17.39	17.80	18.27	19.29	13.14	13.58	14.00	14.46	15.49
	8H	17.16	17.56	18.03	18.43	19.47	13.33	13.72	14.20	14.60	15.64
	12H	17.31	17.66	18.18	18.52	19.62	13.46	13.81	14.33	14.67	15.77
12H	4H	16.33	16.81	17.18	17.67	18.70	12.63	13.11	13.48	13.97	15.00
	6H	16.92	17.31	17.79	18.19	19.23	13.19	13.58	14.06	14.46	15.50
	8H	17.15	17.50	18.02	18.36	19.46	13.41	13.76	14.28	14.62	15.72

END OF REPORT