

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: P923619

Luminaire Tested: DFN2DIP-TR3F0-090D040US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923619
REPORT IS A COMBINATION OF REPORTS P901818 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-090D040US940-RLLONL
Description: 3 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

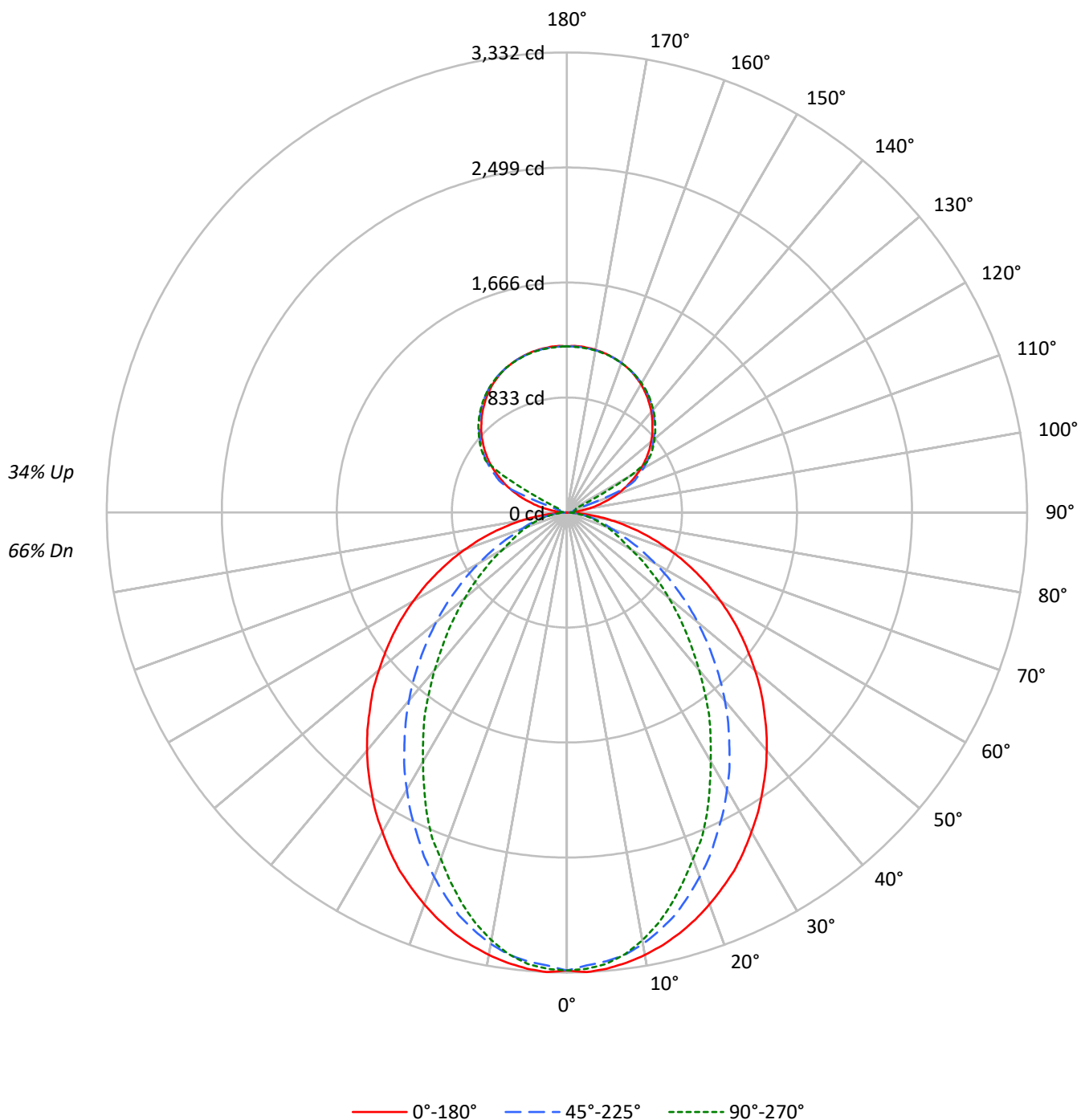
Lumens per Lamp: N/A
Luminaire Lumens: 10352.8 lumens
Efficiency: N/A
Efficacy: 83.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 124.4
Input Voltage (V):
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

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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
RCR																	
0	111	111	111	111	104	104	104	104	92	92	92		81	81	81		71
1	102	98	94	91	96	92	89	86	82	79	77		72	71	69		64
2	93	86	80	75	88	81	76	72	73	68	65		64	61	59		57
3	86	76	69	63	80	72	66	61	65	60	55		57	54	50		51
4	79	68	60	54	74	65	58	52	58	52	48		52	47	44		46
5	73	61	53	47	68	58	51	45	52	46	42		47	42	38		42
6	67	55	47	41	63	52	45	40	47	41	37		43	38	34		38
7	62	50	42	37	59	48	40	35	43	37	33		39	34	30		35
8	58	46	38	33	55	44	37	32	40	34	29		36	31	27		32
9	54	42	35	29	51	40	33	29	37	31	27		33	28	25		30
10	51	39	32	27	48	37	30	26	34	28	24		31	26	23		28

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4133	4133	4133
5°	4138	4064	4091
10°	4094	3981	3955
15°	4036	3846	3747
20°	3959	3661	3492
25°	3880	3455	3246
30°	3775	3244	2935
35°	3672	3017	2662
40°	3567	2783	2350
45°	3446	2523	2067
50°	3320	2262	1790
55°	3188	1982	1525
60°	3035	1691	1253
65°	2859	1396	1124
70°	2646	1120	1013
75°	2378	980	916
80°	1990	811	786
85°	1353	525	575

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3446 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	310.9	3.0
10°-20°	853.4	8.2
20°-30°	1198.1	11.6
30°-40°	1306.0	12.6
40°-50°	1200.4	11.6
50°-60°	942.7	9.1
60°-70°	613.6	5.9
70°-80°	315.9	3.1
80°-90°	82.8	0.8
90°-100°	39.7	0.4
100°-110°	148.0	1.4
110°-120°	392.4	3.8
120°-130°	650.9	6.3
130°-140°	691.4	6.7
140°-150°	642.6	6.2
150°-160°	516.6	5.0
160°-170°	332.9	3.2
170°-180°	114.6	1.1
0°-30°	2362.4	22.8
0°-40°	3668.4	35.4
0°-60°	5811.5	56.1
0°-90°	6823.7	65.9
90°-120°	580.1	5.6
90°-150°	2565.0	24.8
90°-180°	3529.0	34.1
0°-180°	10352.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3317	3317	3317	3317	3317	
5°	3317	3302	3263	3290	3281	315
15°	3155	3122	3020	2963	2933	889
25°	2864	2768	2570	2446	2401	1317
35°	2468	2314	2050	1861	1795	1544
45°	2017	1816	1501	1288	1216	1558
55°	1534	1300	975	796	738	1371
65°	1036	792	522	420	411	1027
75°	552	342	240	219	216	584
85°	129	66	57	57	57	148
90°	1	10	17	22	24	10
95°	56	28	34	38	38	67
105°	265	291	53	63	66	283
115°	501	516	537	134	72	493
125°	708	720	736	742	745	632
135°	876	890	898	907	905	677
145°	1016	1016	1030	1036	1032	636
155°	1119	1112	1122	1127	1120	516
165°	1179	1174	1177	1183	1177	333
175°	1206	1200	1202	1208	1199	115
180°	1204	1204	1204	1204	1204	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3316.9	3316.9	3316.9	3316.9	3316.9
2.5°	3331.9	3316.9	3283.7	3314.0	3308.0
5°	3316.9	3301.9	3262.8	3289.8	3280.9
7.5°	3289.8	3272.0	3230.0	3241.7	3226.7
10°	3253.9	3232.8	3173.0	3163.7	3145.9
12.5°	3208.9	3181.9	3100.7	3082.8	3049.6
15°	3154.8	3121.7	3019.8	2962.7	2932.8
17.5°	3091.7	3043.7	2917.5	2851.6	2803.5
20°	3019.8	2959.6	2809.5	2734.7	2668.4
22.5°	2941.8	2872.6	2698.4	2596.5	2551.6
25°	2863.7	2767.5	2569.5	2446.5	2401.3
27.5°	2770.7	2668.4	2449.4	2308.3	2239.2
30°	2671.7	2557.3	2317.2	2164.4	2083.1
32.5°	2575.4	2437.2	2191.4	2011.2	1936.0
35°	2467.5	2314.3	2050.3	1861.2	1794.9
37.5°	2362.4	2197.2	1918.2	1710.8	1636.0
40°	2251.3	2071.4	1779.9	1566.9	1488.9
42.5°	2137.3	1945.3	1642.0	1419.8	1344.9
45°	2017.2	1816.0	1500.9	1287.5	1215.6
47.5°	1903.2	1690.1	1365.9	1152.5	1086.6
50°	1777.1	1564.0	1233.8	1026.4	963.7
52.5°	1653.9	1428.7	1107.7	909.5	852.6
55°	1533.7	1299.7	975.4	795.6	738.5
57.5°	1410.9	1170.7	858.6	690.5	642.4
60°	1284.7	1044.5	735.4	582.5	534.4
62.5°	1161.8	921.7	630.3	486.3	462.4
65°	1035.6	792.4	522.3	420.4	411.2
67.5°	915.6	672.3	420.4	369.1	360.2
70°	789.5	555.4	348.1	318.2	306.0
72.5°	669.4	447.1	291.1	267.2	261.2
75°	552.2	342.1	240.1	219.1	216.2
77.5°	435.3	243.0	189.1	177.1	171.0
80°	327.1	174.2	143.9	132.2	132.2
82.5°	228.0	117.2	99.1	93.0	93.0
85°	128.9	65.9	57.0	57.0	57.0
87.5°	48.1	23.9	23.9	21.0	21.0
90°	0.8	10.4	17.4	21.8	23.5
92.5°	21.8	18.3	20.9	22.6	23.5
95°	56.5	27.8	33.9	38.3	37.5
97.5°	101.9	30.5	44.4	47.1	47.9
100°	154.2	34.9	49.7	56.5	58.3
102.5°	211.6	210.0	51.4	60.9	63.6
105°	264.7	291.0	53.1	62.7	66.2
107.5°	326.6	348.4	54.9	64.5	67.9
110°	385.9	404.1	152.5	65.4	68.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	441.7	457.3	442.5	67.1	69.7
115°	500.8	515.6	537.4	134.1	71.5
117.5°	552.2	569.6	584.5	459.9	231.7
120°	609.8	622.8	638.5	649.0	531.4
122.5°	658.4	672.4	689.9	695.1	696.0
125°	708.1	719.5	736.0	742.2	744.8
127.5°	753.4	765.6	778.7	787.5	788.3
130°	796.1	810.1	819.6	829.2	828.4
132.5°	839.6	851.0	860.6	868.4	867.6
135°	876.3	890.3	898.0	906.8	905.1
137.5°	914.5	925.0	933.8	942.4	939.9
140°	952.0	959.0	968.6	976.4	972.1
142.5°	983.5	989.5	1000.9	1007.7	1003.4
145°	1016.5	1015.7	1030.4	1036.5	1032.2
147.5°	1045.2	1042.6	1057.4	1061.8	1058.4
150°	1073.1	1067.0	1081.0	1086.2	1081.8
152.5°	1096.6	1089.7	1102.7	1108.0	1101.9
155°	1119.3	1111.5	1121.9	1127.1	1120.2
157.5°	1137.6	1130.6	1138.5	1144.6	1137.6
160°	1153.2	1148.0	1153.2	1158.4	1152.4
162.5°	1167.2	1162.0	1166.4	1172.4	1164.6
165°	1179.4	1174.2	1176.8	1182.9	1176.8
167.5°	1189.0	1183.7	1186.4	1192.5	1184.6
170°	1196.9	1191.6	1193.3	1199.4	1191.6
172.5°	1202.0	1196.9	1198.6	1204.7	1196.9
175°	1206.3	1200.2	1202.0	1208.1	1199.4
177.5°	1208.1	1202.0	1202.9	1209.1	1201.2
180°	1203.8	1203.8	1203.8	1203.8	1203.8

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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	13.40	14.38	14.21	15.21	16.23	9.37	10.35	10.19	11.18	12.21
	3H	15.08	15.95	15.90	16.79	17.85	10.57	11.44	11.40	12.29	13.34
	4H	15.68	16.51	16.53	17.36	18.43	11.02	11.85	11.87	12.70	13.76
	6H	16.11	16.87	16.96	17.72	18.80	11.34	12.11	12.20	12.96	14.04
	8H	16.23	16.96	17.10	17.83	18.91	11.44	12.16	12.30	13.03	14.11
	12H	16.29	16.98	17.17	17.85	18.96	11.48	12.17	12.35	13.04	14.14
4H	2H	13.43	14.26	14.28	15.11	16.17	9.98	10.81	10.83	11.66	12.72
	3H	15.26	15.95	16.12	16.83	17.91	11.34	12.02	12.20	12.91	13.99
	4H	15.95	16.58	16.83	17.46	18.57	11.89	12.51	12.76	13.39	14.50
	6H	16.47	17.01	17.36	17.91	19.02	12.31	12.85	13.20	13.75	14.86
	8H	16.64	17.14	17.53	18.04	19.17	12.44	12.94	13.33	13.84	14.96
	12H	16.74	17.19	17.65	18.11	19.24	12.51	12.96	13.42	13.87	15.00
8H	4H	15.93	16.43	16.82	17.33	18.46	12.17	12.67	13.06	13.57	14.70
	6H	16.49	16.91	17.41	17.85	18.97	12.69	13.10	13.61	14.04	15.17
	8H	16.70	17.07	17.63	18.00	19.14	12.88	13.24	13.80	14.18	15.32
	12H	16.84	17.17	17.77	18.09	19.28	13.00	13.32	13.93	14.24	15.44
12H	4H	15.89	16.34	16.80	17.26	18.39	12.18	12.63	13.09	13.55	14.68
	6H	16.47	16.84	17.40	17.77	18.91	12.74	13.10	13.66	14.04	15.18
	8H	16.69	17.01	17.62	17.94	19.13	12.95	13.27	13.88	14.20	15.39