

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: P907486

Luminaire Tested: DFN2DIP-TR4F0-100D040US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907486
REPORT IS A COMBINATION OF REPORTS P900381 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-100D040US835-FLLFLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

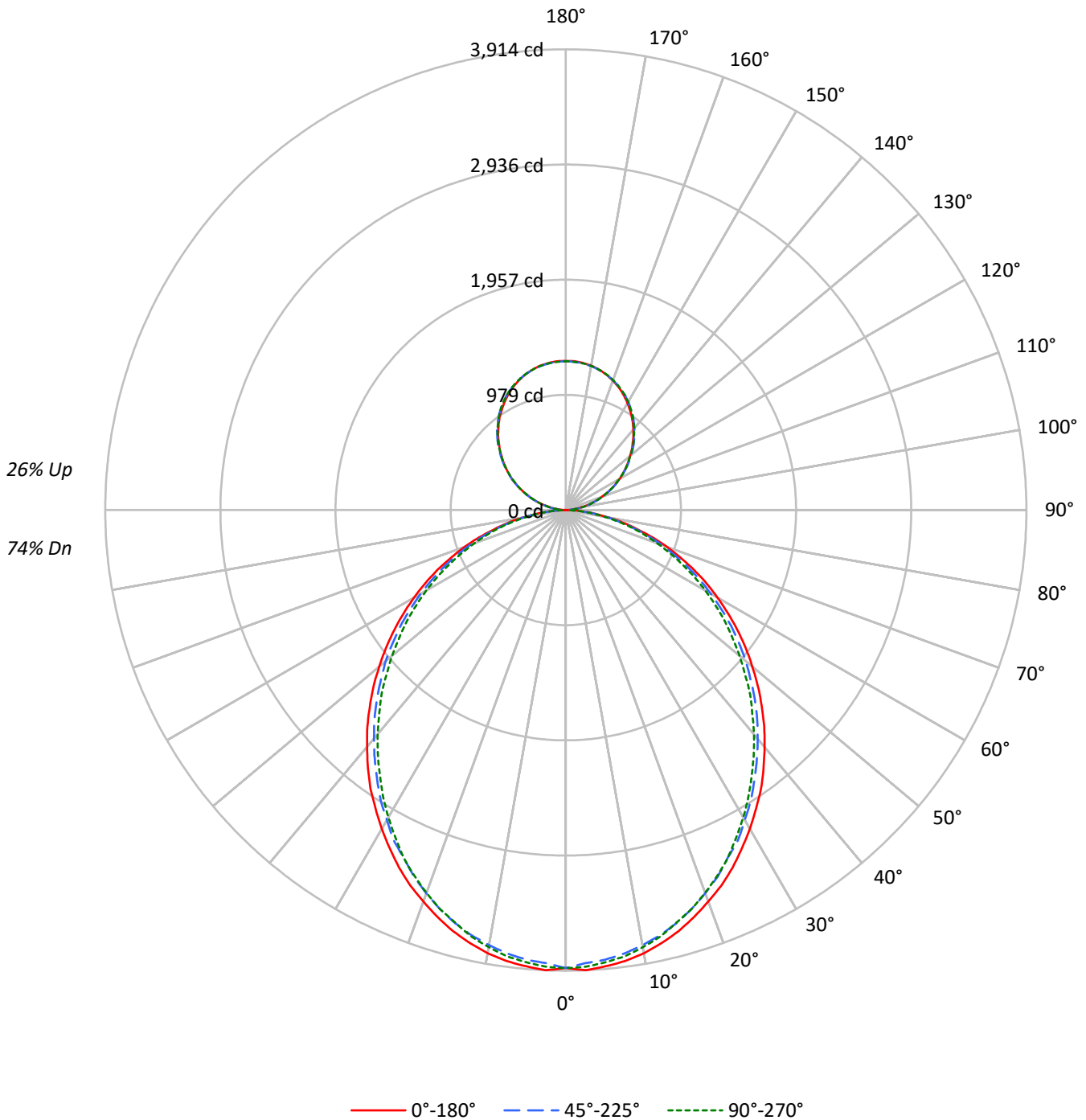
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13440.0 lumens
Efficiency: N/A
Efficacy: 102.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 131.4
Input Voltage (V):
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P907486
CATALOG NUMBER: DFN2DIP-TR4F0-100D040US835-FLLFLL

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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	113	113	113	113	107	107	107	107	96	96	96	87	87	87	78	78	78	74	74	74	74
1	103	99	95	91	98	94	90	87	85	82	80	77	74	72	69	67	66	62	62	62	62
2	94	86	80	74	89	82	76	71	74	70	66	67	64	61	61	58	55	52	52	52	52
3	86	76	68	62	81	72	65	60	66	60	55	59	55	51	54	50	47	44	44	44	44
4	79	67	59	53	74	64	57	51	58	52	47	53	48	44	48	44	41	38	38	38	38
5	72	60	52	45	68	57	50	44	52	46	41	48	42	38	43	39	36	33	33	33	33
6	67	54	46	40	63	52	44	38	47	41	36	43	38	34	39	35	31	29	29	29	29
7	62	49	41	35	58	47	39	34	43	37	32	39	34	30	36	31	28	26	26	26	26
8	57	45	37	31	54	43	35	30	39	33	28	36	31	27	33	29	25	23	23	23	23
9	54	41	33	28	51	39	32	27	36	30	26	33	28	24	31	26	23	21	21	21	21
10	50	38	30	25	48	36	29	24	33	27	23	31	26	22	28	24	21	19	19	19	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3091	3091	3091
5°	3096	3048	3069
10°	3071	3007	3027
15°	3026	2957	2962
20°	2965	2889	2895
25°	2904	2806	2818
30°	2828	2730	2721
35°	2756	2639	2617
40°	2667	2548	2519
45°	2579	2457	2418
50°	2482	2361	2301
55°	2381	2250	2194
60°	2267	2118	2071
65°	2142	1982	1926
70°	1983	1815	1770
75°	1763	1616	1626
80°	1498	1362	1351
85°	1083	925	895

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2579 cd/sqm



TEST NUMBER: P907486

CATALOG NUMBER: DFN2DIP-TR4F0-100D040US835-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	366.2	2.7
10°-20°	1030.4	7.7
20°-30°	1514.3	11.3
30°-40°	1758.8	13.1
40°-50°	1756.6	13.1
50°-60°	1531.7	11.4
60°-70°	1132.3	8.4
70°-80°	640.6	4.8
80°-90°	172.7	1.3
90°-100°	78.3	0.6
100°-110°	248.7	1.9
110°-120°	425.6	3.2
120°-130°	559.8	4.2
130°-140°	628.3	4.7
140°-150°	616.2	4.6
150°-160°	516.9	3.8
160°-170°	342.8	2.6
170°-180°	119.8	0.9
0°-30°	2911.0	21.7
0°-40°	4669.7	34.7
0°-60°	7958.0	59.2
0°-90°	9903.6	73.7
90°-120°	752.7	5.6
90°-150°	2556.9	19.0
90°-180°	3536.0	26.3
0°-180°	13440.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3891	3891	3891	3891	3891	
5°	3891	3876	3835	3865	3858	369
15°	3704	3682	3633	3648	3630	1043
25°	3352	3323	3259	3266	3259	1543
35°	2892	2855	2795	2772	2754	1806
45°	2354	2327	2271	2230	2215	1816
55°	1781	1759	1714	1669	1650	1592
65°	1201	1179	1141	1108	1089	1188
75°	628	621	602	580	588	671
85°	153	150	146	135	131	171
90°	1	14	37	35	36	13
95°	56	66	68	68	66	62
105°	230	233	235	237	237	242
115°	427	433	431	430	427	422
125°	621	631	628	624	623	555
135°	804	815	818	816	814	621
145°	976	983	989	990	986	610
155°	1116	1119	1122	1127	1124	513
165°	1214	1212	1212	1220	1215	342
175°	1263	1260	1257	1265	1259	120
180°	1265	1265	1265	1265	1265	



TEST NUMBER: P907486

CATALOG NUMBER: DFN2DIP-TR4F0-100D040US835-FLLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3891.1	3891.1	3891.1	3891.1	3891.1
2.5°	3913.7	3895.0	3853.7	3891.1	3883.9
5°	3891.1	3876.4	3835.1	3864.9	3857.7
7.5°	3864.9	3842.6	3801.3	3831.5	3824.0
10°	3824.0	3797.8	3752.9	3782.7	3771.6
12.5°	3767.6	3745.4	3700.5	3719.2	3711.6
15°	3704.1	3681.9	3633.0	3648.1	3629.5
17.5°	3625.5	3603.3	3554.4	3573.1	3554.4
20°	3539.3	3517.1	3464.7	3475.8	3461.1
22.5°	3453.6	3419.9	3371.0	3371.0	3363.5
25°	3352.4	3322.6	3259.1	3266.2	3259.1
27.5°	3240.0	3213.8	3165.4	3154.3	3135.6
30°	3128.1	3097.9	3041.9	3030.8	3015.7
32.5°	3008.2	2986.0	2926.0	2903.4	2888.3
35°	2892.3	2855.0	2795.0	2772.4	2753.7
37.5°	2761.3	2727.5	2667.6	2641.4	2622.7
40°	2626.7	2596.5	2536.6	2503.3	2488.2
42.5°	2495.7	2465.5	2406.0	2368.3	2346.1
45°	2353.6	2327.4	2271.0	2230.1	2215.1
47.5°	2215.1	2188.9	2128.9	2087.6	2065.4
50°	2069.0	2050.3	1997.9	1945.5	1926.9
52.5°	1926.9	1900.7	1852.2	1811.0	1784.8
55°	1781.2	1758.6	1713.7	1668.8	1650.2
57.5°	1635.1	1616.4	1567.6	1522.8	1507.7
60°	1489.0	1474.3	1421.9	1380.6	1369.5
62.5°	1346.9	1320.7	1283.4	1246.1	1231.0
65°	1201.2	1178.6	1141.3	1107.5	1088.9
67.5°	1051.6	1032.5	999.2	973.0	957.9
70°	913.0	897.9	864.2	838.0	823.3
72.5°	770.9	755.8	737.2	711.0	699.8
75°	628.4	621.3	602.2	580.0	587.5
77.5°	501.4	486.3	478.7	467.6	456.5
80°	374.3	370.4	362.8	351.7	344.2
82.5°	254.5	254.5	250.9	235.8	235.8
85°	153.2	149.7	146.1	134.6	131.0
87.5°	67.5	59.9	52.4	41.3	37.3
90°	1.1	13.7	37.4	35.1	36.2
92.5°	23.6	32.0	33.2	34.3	34.3
95°	55.7	66.4	68.3	68.3	66.4
97.5°	92.7	102.6	106.8	106.8	106.8
100°	135.4	144.2	147.2	147.2	146.1
102.5°	180.4	186.9	191.1	192.2	191.1
105°	229.6	232.6	234.9	236.8	236.8
107.5°	278.4	283.0	283.0	283.7	278.4
110°	325.7	331.8	331.8	331.8	328.8



TEST NUMBER: P907486

CATALOG NUMBER: DFN2DIP-TR4F0-100D040US835-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	376.8	383.3	382.1	379.1	376.8
115°	427.1	433.3	431.3	430.2	427.1
117.5°	477.1	485.5	480.2	477.1	474.1
120°	527.5	535.8	527.5	527.5	524.0
122.5°	573.2	583.9	578.6	575.5	573.2
125°	621.3	630.8	627.8	624.3	623.2
127.5°	668.2	680.0	675.8	671.2	668.2
130°	712.0	725.8	723.9	721.6	717.4
132.5°	761.2	771.9	772.7	767.3	764.3
135°	803.6	815.4	817.7	816.5	813.5
137.5°	850.9	860.4	862.3	861.5	857.0
140°	892.4	902.0	907.3	907.3	903.1
142.5°	935.2	944.7	947.7	948.9	944.7
145°	975.6	983.2	989.3	990.5	986.3
147.5°	1011.8	1021.3	1025.9	1027.8	1023.6
150°	1049.2	1055.7	1059.9	1063.3	1059.9
152.5°	1082.4	1088.8	1094.2	1098.4	1094.2
155°	1115.5	1118.6	1122.0	1127.4	1123.9
157.5°	1144.2	1146.4	1148.3	1156.0	1150.6
160°	1169.7	1172.0	1173.1	1179.6	1175.0
162.5°	1193.3	1193.3	1194.5	1201.7	1196.4
165°	1213.6	1212.4	1212.4	1220.0	1214.7
167.5°	1231.9	1228.4	1228.4	1236.1	1230.7
170°	1245.6	1242.5	1241.4	1249.0	1242.5
172.5°	1255.1	1252.1	1250.9	1258.6	1252.1
175°	1262.8	1259.7	1257.4	1265.0	1258.6
177.5°	1267.0	1263.9	1261.6	1268.1	1261.6
180°	1265.0	1265.0	1265.0	1265.0	1265.0



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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	13.14	14.26	13.86	15.00	15.89	12.70	13.83	13.43	14.57	15.46
	3H	14.81	15.82	15.55	16.58	17.50	14.34	15.35	15.08	16.11	17.03
	4H	15.41	16.37	16.17	17.13	18.06	14.94	15.89	15.70	16.66	17.59
	6H	15.83	16.71	16.59	17.48	18.42	15.35	16.23	16.12	17.00	17.95
	8H	15.94	16.78	16.72	17.57	18.52	15.46	16.30	16.24	17.10	18.04
	12H	16.00	16.80	16.78	17.58	18.56	15.52	16.32	16.30	17.10	18.08
4H	2H	13.63	14.58	14.39	15.34	16.28	13.28	14.24	14.04	15.00	15.93
	3H	15.52	16.31	16.29	17.11	18.06	15.12	15.92	15.90	16.72	17.67
	4H	16.24	16.97	17.03	17.77	18.74	15.84	16.56	16.62	17.36	18.34
	6H	16.77	17.40	17.58	18.22	19.21	16.36	16.99	17.17	17.81	18.80
	8H	16.93	17.51	17.73	18.33	19.33	16.52	17.10	17.32	17.92	18.92
	12H	17.01	17.54	17.84	18.38	19.38	16.59	17.12	17.42	17.96	18.96
8H	4H	16.46	17.05	17.27	17.87	18.86	16.10	16.69	16.91	17.51	18.50
	6H	17.10	17.59	17.94	18.45	19.45	16.74	17.23	17.58	18.09	19.08
	8H	17.32	17.76	18.17	18.62	19.63	16.96	17.39	17.80	18.25	19.26
	12H	17.47	17.85	18.32	18.70	19.77	17.08	17.47	17.93	18.31	19.38
12H	4H	16.46	16.99	17.29	17.83	18.83	16.11	16.63	16.93	17.47	18.48
	6H	17.13	17.57	17.98	18.42	19.44	16.78	17.22	17.63	18.07	19.09
	8H	17.39	17.77	18.24	18.62	19.69	17.03	17.41	17.88	18.26	19.33