

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: P907301

Luminaire Tested: DFN2DIP-TR4F0-040D110US835-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907301
REPORT IS A COMBINATION OF REPORTS P902016 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-040D110US835-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

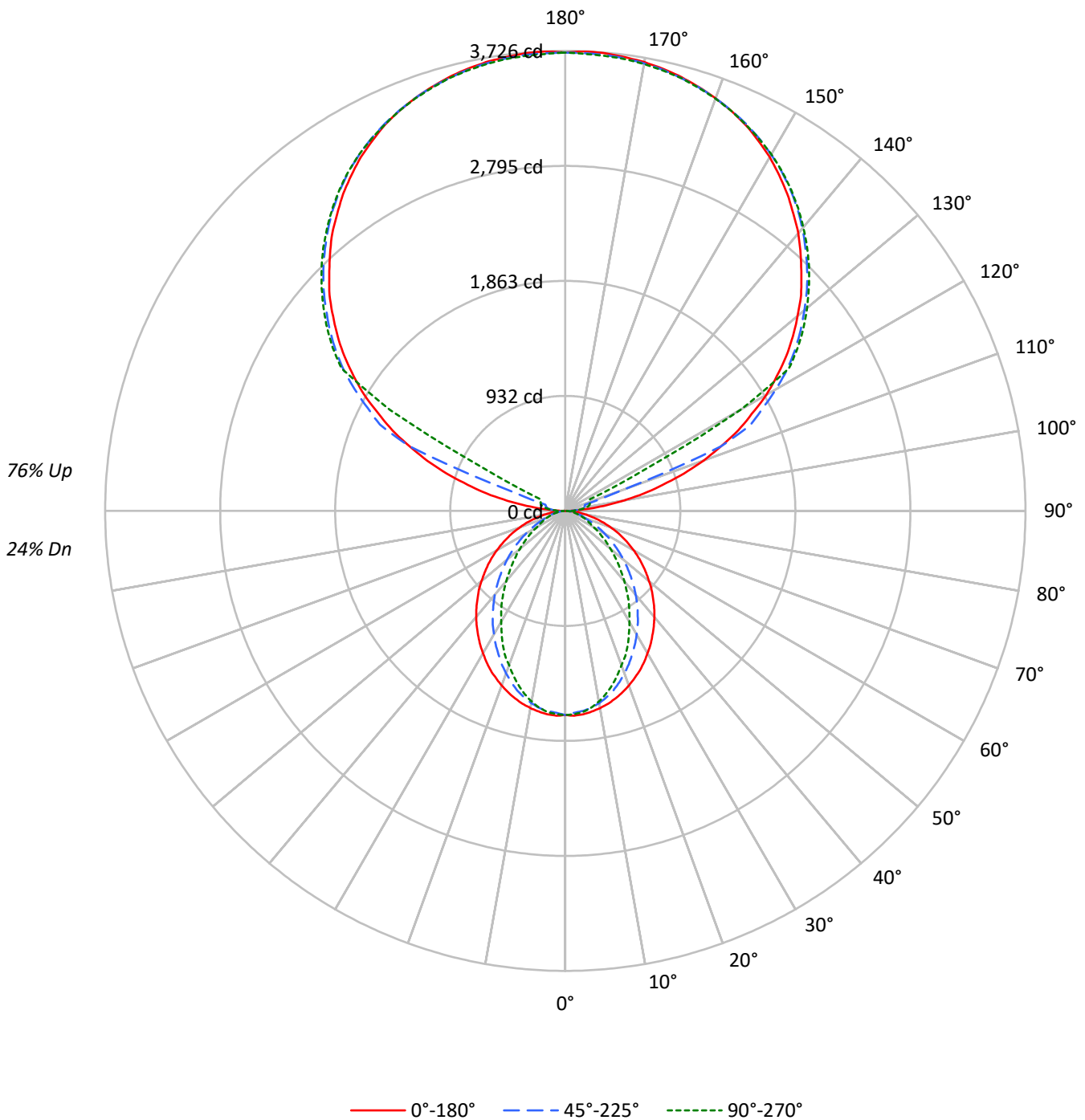
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14290.0 lumens
Efficiency: N/A
Efficacy: 122.5 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-Indirect

Input Watts (W): 116.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P907301
CATALOG NUMBER: DFN2DIP-TR4F0-040D110US835-RLLONL

Luminous Intensity Polar Plot





TEST NUMBER: P907301

CATALOG NUMBER: DFN2DIP-TR4F0-040D110US835-RLLONL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				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	101	101	101	101	90	90	90	90	69	69	69	50	50	50	32	32	32	24				24
1	92	88	84	81	82	78	75	73	60	58	57	44	43	42	29	28	27	21				21
2	84	77	71	67	75	69	64	60	53	50	47	39	37	35	25	24	23	18				18
3	77	68	61	56	68	61	55	50	47	43	40	34	32	30	23	21	20	15				15
4	70	60	53	47	62	54	48	43	42	38	34	31	28	26	20	19	18	13				13
5	64	53	46	40	57	48	41	37	37	33	29	28	25	22	19	17	15	12				12
6	59	48	40	35	53	43	36	32	34	29	26	25	22	20	17	15	14	10				10
7	55	43	36	30	49	39	32	28	30	26	22	23	20	17	15	14	12	9				9
8	51	39	32	27	45	35	29	24	28	23	20	21	18	15	14	12	11	8				8
9	47	36	28	24	42	32	26	22	25	21	18	19	16	14	13	11	10	8				8
10	44	32	26	21	39	29	23	19	23	19	16	18	15	12	12	10	9	7				7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1313	1313	1313
5°	1315	1292	1301
10°	1302	1267	1258
15°	1285	1225	1193
20°	1261	1167	1113
25°	1237	1103	1035
30°	1204	1036	937
35°	1172	965	850
40°	1140	891	751
45°	1102	809	661
50°	1063	727	574
55°	1022	638	489
60°	975	546	403
65°	920	452	362
70°	855	364	328
75°	772	321	298
80°	652	269	259
85°	455	180	194

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1970 cd/sqm



TEST NUMBER: P907301

CATALOG NUMBER: DFN2DIP-TR4F0-040D110US835-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	154.9	1.1
10°-20°	425.3	3.0
20°-30°	597.2	4.2
30°-40°	650.9	4.6
40°-50°	598.3	4.2
50°-60°	469.9	3.3
60°-70°	305.8	2.1
70°-80°	157.4	1.1
80°-90°	46.7	0.3
90°-100°	122.4	0.9
100°-110°	456.3	3.2
110°-120°	1210.3	8.5
120°-130°	2007.3	14.0
130°-140°	2132.2	14.9
140°-150°	1981.7	13.9
150°-160°	1593.2	11.1
160°-170°	1026.6	7.2
170°-180°	353.3	2.5
0°-30°	1177.4	8.2
0°-40°	1828.4	12.8
0°-60°	2896.5	20.3
0°-90°	3406.5	23.8
90°-120°	1789.0	12.5
90°-150°	7910.3	55.4
90°-180°	10883.0	76.2
0°-180°	14290.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1653	1653	1653	1653	1653	
5°	1653	1646	1626	1640	1635	157
15°	1572	1556	1505	1477	1462	443
25°	1427	1379	1281	1219	1197	656
35°	1230	1154	1022	928	895	770
45°	1005	905	748	642	606	776
55°	764	648	486	396	368	683
65°	516	395	260	210	205	512
75°	275	170	120	109	108	291
85°	64	33	28	28	28	74
90°	3	32	54	67	72	13
95°	174	86	105	118	116	207
105°	817	897	164	193	204	873
115°	1544	1590	1658	414	220	1521
125°	2184	2219	2270	2289	2297	1948
135°	2702	2746	2769	2797	2791	2088
145°	3135	3132	3178	3197	3183	1961
155°	3452	3428	3460	3476	3455	1591
165°	3637	3621	3629	3648	3629	1028
175°	3720	3702	3707	3726	3699	354
180°	3712	3712	3712	3712	3712	



TEST NUMBER: P907301

CATALOG NUMBER: DFN2DIP-TR4F0-040D110US835-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1653.2	1653.2	1653.2	1653.2	1653.2
2.5°	1660.7	1653.2	1636.7	1651.8	1648.7
5°	1653.2	1645.7	1626.2	1639.7	1635.3
7.5°	1639.7	1630.8	1609.9	1615.7	1608.3
10°	1621.8	1611.3	1581.4	1576.8	1568.0
12.5°	1599.4	1585.9	1545.4	1536.5	1520.0
15°	1572.4	1555.9	1505.1	1476.7	1461.8
17.5°	1541.0	1517.0	1454.1	1421.3	1397.3
20°	1505.1	1475.1	1400.3	1363.0	1330.0
22.5°	1466.2	1431.8	1344.9	1294.1	1271.8
25°	1427.3	1379.4	1280.6	1219.4	1196.8
27.5°	1381.0	1330.0	1220.8	1150.5	1116.0
30°	1331.6	1274.6	1154.9	1078.7	1038.3
32.5°	1283.7	1214.8	1092.2	1002.4	964.9
35°	1229.9	1153.5	1021.9	927.6	894.6
37.5°	1177.5	1095.1	956.0	852.7	815.4
40°	1122.1	1032.4	887.2	781.0	742.1
42.5°	1065.2	969.5	818.4	707.6	670.3
45°	1005.4	905.1	748.1	641.8	605.9
47.5°	948.6	842.4	680.8	574.5	541.6
50°	885.7	779.5	614.9	511.6	480.3
52.5°	824.3	712.1	552.1	453.3	424.9
55°	764.5	647.8	486.2	396.5	368.1
57.5°	703.2	583.5	427.9	344.1	320.2
60°	640.3	520.6	366.5	290.3	266.4
62.5°	579.1	459.4	314.1	242.4	230.5
65°	516.2	394.9	260.3	209.5	204.9
67.5°	456.4	335.1	209.5	184.0	179.5
70°	393.5	276.8	173.5	158.6	152.5
72.5°	333.7	222.9	145.1	133.2	130.2
75°	275.2	170.5	119.7	109.2	107.8
77.5°	217.0	121.1	94.3	88.3	85.2
80°	163.0	86.8	71.7	65.9	65.9
82.5°	113.7	58.4	49.4	46.3	46.3
85°	64.3	32.9	28.4	28.4	28.4
87.5°	24.0	11.9	11.9	10.5	10.5
90°	2.6	32.2	53.6	67.3	72.4
92.5°	67.3	56.5	64.4	69.9	72.4
95°	174.5	85.8	104.6	118.3	115.5
97.5°	314.2	94.1	136.8	145.1	147.7
100°	475.6	107.5	153.1	174.5	179.9
102.5°	652.6	647.5	158.5	187.9	196.2
105°	816.6	897.3	164.0	193.3	204.2
107.5°	1007.4	1074.3	169.4	198.7	209.6
110°	1190.1	1246.3	470.2	201.6	212.1



TEST NUMBER: P907301

CATALOG NUMBER: DFN2DIP-TR4F0-040D110US835-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1362.1	1410.2	1364.6	206.7	215.0
115°	1544.5	1590.1	1657.5	413.7	220.4
117.5°	1703.1	1756.7	1802.6	1418.2	714.5
120°	1880.4	1920.6	1969.1	2001.3	1638.6
122.5°	2030.7	2073.7	2127.6	2143.6	2146.5
125°	2183.8	2218.9	2269.9	2288.7	2296.7
127.5°	2323.5	2361.1	2401.6	2428.4	2431.0
130°	2455.2	2498.3	2527.6	2557.3	2554.8
132.5°	2589.5	2624.6	2654.0	2678.2	2675.7
135°	2702.5	2745.5	2769.4	2796.6	2791.1
137.5°	2820.5	2852.7	2879.8	2906.6	2898.6
140°	2936.0	2957.6	2987.0	3011.2	2997.8
142.5°	3032.9	3051.7	3086.5	3107.9	3094.5
145°	3135.0	3132.1	3177.7	3196.6	3183.2
147.5°	3223.4	3215.4	3261.0	3274.4	3263.9
150°	3309.5	3290.7	3333.7	3349.7	3336.3
152.5°	3381.9	3360.5	3400.7	3417.0	3398.2
155°	3451.8	3427.8	3460.0	3476.0	3454.6
157.5°	3508.2	3486.8	3511.1	3529.9	3508.2
160°	3556.7	3540.4	3556.7	3572.6	3553.8
162.5°	3599.4	3583.5	3596.9	3615.7	3591.5
165°	3637.1	3621.1	3629.1	3647.9	3629.1
167.5°	3666.7	3650.5	3658.8	3677.6	3653.4
170°	3691.0	3674.7	3680.1	3699.0	3674.7
172.5°	3706.9	3691.0	3696.4	3715.2	3691.0
175°	3720.3	3701.5	3706.9	3725.8	3699.0
177.5°	3725.8	3706.9	3709.8	3728.6	3704.4
180°	3712.4	3712.4	3712.4	3712.4	3712.4



TEST NUMBER: P907301
 CATALOG NUMBER: DFN2DIP-TR4F0-040D110US835-RLONL

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	4.93	5.58	6.09	6.72	8.33	0.90	1.56	2.06	2.70	4.30
	3H	6.59	7.18	7.76	8.33	9.94	2.08	2.66	3.24	3.81	5.43
	4H	7.19	7.75	8.36	8.90	10.52	2.52	3.08	3.69	4.23	5.85
	6H	7.60	8.11	8.78	9.27	10.90	2.83	3.34	4.01	4.50	6.13
	8H	7.73	8.21	8.91	9.38	11.00	2.92	3.40	4.10	4.57	6.20
	12H	7.78	8.24	8.97	9.40	11.05	2.96	3.42	4.14	4.58	6.23
4H	2H	4.92	5.48	6.11	6.63	8.25	1.47	2.03	2.66	3.18	4.80
	3H	6.74	7.20	7.92	8.37	10.01	2.81	3.27	3.99	4.45	6.08
	4H	7.42	7.85	8.61	9.01	10.66	3.35	3.78	4.54	4.94	6.59
	6H	7.93	8.29	9.12	9.48	11.12	3.76	4.13	4.95	5.31	6.95
	8H	8.10	8.44	9.29	9.62	11.28	3.89	4.23	5.08	5.40	7.06
	12H	8.19	8.49	9.39	9.68	11.35	3.95	4.25	5.15	5.44	7.10
8H	4H	7.38	7.72	8.57	8.89	10.55	3.62	3.96	4.81	5.13	6.79
	6H	7.94	8.22	9.15	9.44	11.09	4.13	4.41	5.34	5.63	7.29
	8H	8.15	8.40	9.37	9.59	11.27	4.32	4.57	5.54	5.76	7.44
	12H	8.28	8.50	9.50	9.69	11.40	4.43	4.65	5.65	5.84	7.55
12H	4H	7.32	7.63	8.53	8.82	10.48	3.61	3.92	4.82	5.11	6.77
	6H	7.91	8.15	9.12	9.35	11.03	4.18	4.42	5.39	5.62	7.30
	8H	8.12	8.34	9.34	9.53	11.24	4.38	4.60	5.60	5.79	7.50