

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: P904573

Luminaire Tested: DFN2DIP-TR4F0-040D110US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904573
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-TR4F0-040D110US830-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

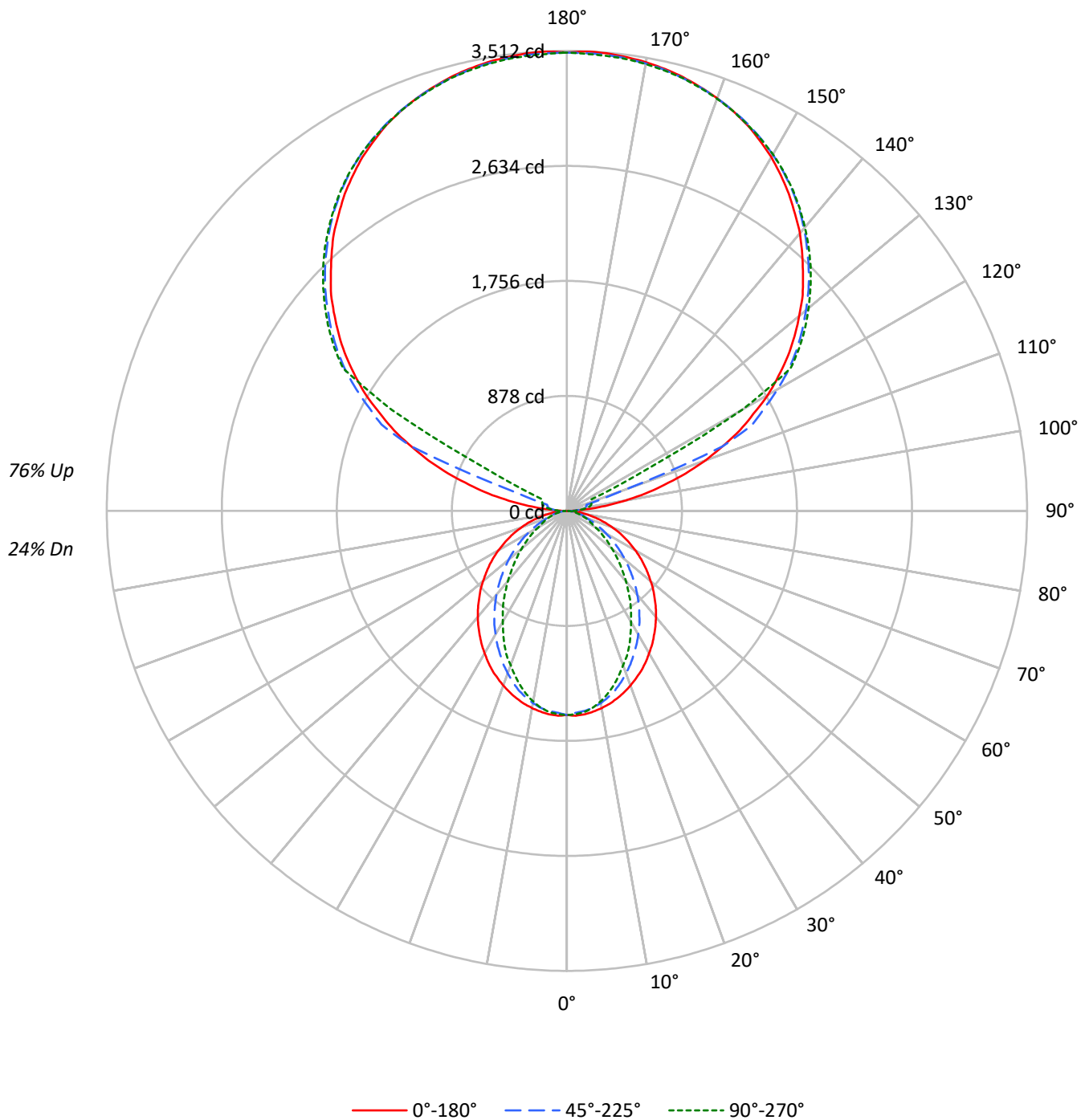
Lumens per Lamp: N/A
Luminaire Lumens: 13468.9 lumens
Efficiency: N/A
Efficacy: 115.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

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: P904573

CATALOG NUMBER: DFN2DIP-TR4F0-040D110US830-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P904573

CATALOG NUMBER: DFN2DIP-TR4F0-040D110US830-RLLONL

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1238	1238	1238
5°	1240	1218	1226
10°	1228	1194	1186
15°	1211	1155	1124
20°	1188	1100	1049
25°	1165	1039	975
30°	1135	977	883
35°	1105	910	801
40°	1074	840	708
45°	1038	763	623
50°	1002	685	541
55°	963	602	461
60°	919	514	380
65°	867	426	342
70°	806	343	309
75°	728	303	281
80°	615	254	244
85°	429	170	183

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1856 cd/sqm

TEST NUMBER: P904573

CATALOG NUMBER: DFN2DIP-TR4F0-040D110US830-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	1.1
10°-20°	400.9	3.0
20°-30°	562.8	4.2
30°-40°	613.5	4.6
40°-50°	563.9	4.2
50°-60°	442.9	3.3
60°-70°	288.3	2.1
70°-80°	148.4	1.1
80°-90°	44.0	0.3
90°-100°	115.4	0.9
100°-110°	430.1	3.2
110°-120°	1140.7	8.5
120°-130°	1892.0	14.0
130°-140°	2009.7	14.9
140°-150°	1867.8	13.9
150°-160°	1501.7	11.1
160°-170°	967.6	7.2
170°-180°	333.0	2.5
0°-30°	1109.8	8.2
0°-40°	1723.3	12.8
0°-60°	2730.1	20.3
0°-90°	3210.8	23.8
90°-120°	1686.2	12.5
90°-150°	7455.8	55.4
90°-180°	10258.0	76.2
0°-180°	13468.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1558	1558	1558	1558	1558	
5°	1558	1551	1533	1546	1541	148
15°	1482	1466	1419	1392	1378	418
25°	1345	1300	1207	1149	1128	619
35°	1159	1087	963	874	843	726
45°	948	853	705	605	571	732
55°	721	611	458	374	347	644
65°	486	372	245	198	193	482
75°	259	161	113	103	102	274
85°	61	31	27	27	27	70
90°	2	30	50	63	68	12
95°	164	81	99	112	109	195
105°	770	846	155	182	192	822
115°	1456	1499	1562	390	208	1433
125°	2058	2091	2140	2157	2165	1836
135°	2547	2588	2610	2636	2631	1968
145°	2955	2952	2995	3013	3000	1848
155°	3254	3231	3261	3276	3256	1499
165°	3428	3413	3421	3438	3421	969
175°	3506	3489	3494	3512	3486	334
180°	3499	3499	3499	3499	3499	

TEST NUMBER: P904573

CATALOG NUMBER: DFN2DIP-TR4F0-040D110US830-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1558.2	1558.2	1558.2	1558.2	1558.2
2.5°	1565.3	1558.2	1542.7	1556.9	1554.0
5°	1558.2	1551.1	1532.8	1545.5	1541.3
7.5°	1545.5	1537.1	1517.4	1522.9	1515.9
10°	1528.6	1518.7	1490.5	1486.2	1477.9
12.5°	1507.5	1494.8	1456.6	1448.2	1432.7
15°	1482.1	1466.5	1418.6	1391.9	1377.8
17.5°	1452.5	1429.8	1370.6	1339.6	1317.0
20°	1418.6	1390.3	1319.8	1284.7	1253.6
22.5°	1382.0	1349.5	1267.6	1219.7	1198.7
25°	1345.3	1300.1	1207.0	1149.3	1128.0
27.5°	1301.7	1253.6	1150.7	1084.4	1051.9
30°	1255.1	1201.4	1088.5	1016.7	978.6
32.5°	1209.9	1145.0	1029.4	944.8	909.5
35°	1159.2	1087.2	963.2	874.3	843.2
37.5°	1109.8	1032.2	901.1	803.7	768.5
40°	1057.6	973.1	836.2	736.1	699.5
42.5°	1004.0	913.8	771.4	666.9	631.8
45°	947.6	853.1	705.1	604.9	571.1
47.5°	894.1	794.0	641.7	541.5	510.5
50°	834.8	734.7	579.6	482.2	452.7
52.5°	776.9	671.2	520.4	427.3	400.5
55°	720.6	610.6	458.3	373.7	346.9
57.5°	662.8	550.0	403.3	324.3	301.8
60°	603.5	490.7	345.4	273.6	251.1
62.5°	545.8	433.0	296.1	228.5	217.3
65°	486.5	372.2	245.3	197.5	193.1
67.5°	430.2	315.8	197.5	173.4	169.2
70°	370.9	260.9	163.5	149.5	143.7
72.5°	314.5	210.1	136.8	125.5	122.7
75°	259.4	160.7	112.8	102.9	101.6
77.5°	204.5	114.1	88.9	83.2	80.3
80°	153.6	81.8	67.6	62.1	62.1
82.5°	107.2	55.0	46.6	43.6	43.6
85°	60.6	31.0	26.8	26.8	26.8
87.5°	22.6	11.2	11.2	9.9	9.9
90°	2.5	30.3	50.5	63.4	68.2
92.5°	63.4	53.3	60.7	65.9	68.2
95°	164.5	80.9	98.6	111.5	108.9
97.5°	296.1	88.7	128.9	136.8	139.2
100°	448.3	101.3	144.3	164.5	169.6
102.5°	615.1	610.3	149.4	177.1	184.9
105°	769.7	845.7	154.6	182.2	192.5
107.5°	949.5	1012.6	159.7	187.3	197.6
110°	1121.7	1174.7	443.2	190.0	199.9

TEST NUMBER: P904573

CATALOG NUMBER: DFN2DIP-TR4F0-040D110US830-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1283.8	1329.2	1286.2	194.8	202.6
115°	1455.8	1498.7	1562.3	389.9	207.7
117.5°	1605.2	1655.8	1699.0	1336.7	673.4
120°	1772.4	1810.2	1856.0	1886.3	1544.4
122.5°	1914.0	1954.5	2005.4	2020.4	2023.2
125°	2058.3	2091.4	2139.5	2157.2	2164.7
127.5°	2190.0	2225.4	2263.6	2288.9	2291.3
130°	2314.1	2354.8	2382.4	2410.4	2408.0
132.5°	2440.7	2473.8	2501.5	2524.3	2522.0
135°	2547.2	2587.7	2610.3	2635.9	2630.7
137.5°	2658.4	2688.8	2714.3	2739.6	2732.1
140°	2767.3	2787.7	2815.4	2838.2	2825.6
142.5°	2858.6	2876.4	2909.2	2929.3	2916.7
145°	2954.9	2952.1	2995.1	3012.9	3000.3
147.5°	3038.2	3030.7	3073.6	3086.3	3076.4
150°	3119.3	3101.6	3142.2	3157.2	3144.6
152.5°	3187.6	3167.4	3205.3	3220.7	3202.9
155°	3253.5	3230.8	3261.2	3276.3	3256.1
157.5°	3306.6	3286.5	3309.4	3327.1	3306.6
160°	3352.3	3337.0	3352.3	3367.3	3349.6
162.5°	3392.6	3377.6	3390.2	3408.0	3385.1
165°	3428.1	3413.0	3420.6	3438.3	3420.6
167.5°	3456.0	3440.8	3448.6	3466.3	3443.5
170°	3478.9	3463.6	3468.6	3486.5	3463.6
172.5°	3493.9	3478.9	3484.0	3501.7	3478.9
175°	3506.5	3488.8	3493.9	3511.7	3486.5
177.5°	3511.7	3493.9	3496.6	3514.4	3491.6
180°	3499.1	3499.1	3499.1	3499.1	3499.1

TEST NUMBER: P904573

CATALOG NUMBER: DFN2DIP-TR4F0-040D110US830-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	4.72	5.38	5.88	6.52	8.12	0.69	1.35	1.85	2.49	4.09
	3H	6.39	6.97	7.55	8.12	9.74	1.87	2.46	3.04	3.61	5.22
	4H	6.99	7.54	8.16	8.69	10.31	2.31	2.87	3.49	4.02	5.64
	6H	7.40	7.91	8.58	9.06	10.69	2.63	3.14	3.81	4.29	5.92
	8H	7.52	8.01	8.70	9.17	10.80	2.71	3.20	3.89	4.36	5.99
	12H	7.58	8.04	8.76	9.20	10.84	2.75	3.21	3.94	4.37	6.02
4H	2H	4.72	5.27	5.90	6.42	8.05	1.27	1.82	2.45	2.97	4.60
	3H	6.53	6.99	7.72	8.17	9.80	2.60	3.07	3.79	4.24	5.88
	4H	7.22	7.64	8.40	8.81	10.46	3.14	3.57	4.33	4.73	6.39
	6H	7.72	8.09	8.91	9.27	10.91	3.56	3.92	4.75	5.11	6.75
	8H	7.89	8.23	9.08	9.41	11.07	3.68	4.02	4.87	5.20	6.86
	12H	7.98	8.29	9.19	9.48	11.14	3.74	4.05	4.94	5.23	6.90
8H	4H	7.17	7.51	8.36	8.69	10.35	3.41	3.75	4.60	4.93	6.59
	6H	7.73	8.01	8.94	9.23	10.89	3.93	4.21	5.13	5.42	7.08
	8H	7.95	8.19	9.16	9.39	11.06	4.12	4.36	5.33	5.56	7.23
	12H	8.08	8.29	9.29	9.49	11.19	4.23	4.44	5.44	5.64	7.34
12H	4H	7.12	7.42	8.32	8.61	10.27	3.41	3.72	4.61	4.90	6.57
	6H	7.71	7.95	8.92	9.15	10.82	3.97	4.22	5.19	5.41	7.09
	8H	7.92	8.13	9.13	9.33	11.03	4.18	4.39	5.39	5.58	7.29

END OF REPORT