

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: P923564

Luminaire Tested: DFN2DIP-TR3F0-070D040US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923564
REPORT IS A COMBINATION OF REPORTS P900293 AND P897195
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-070D040US940-FLLFLL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

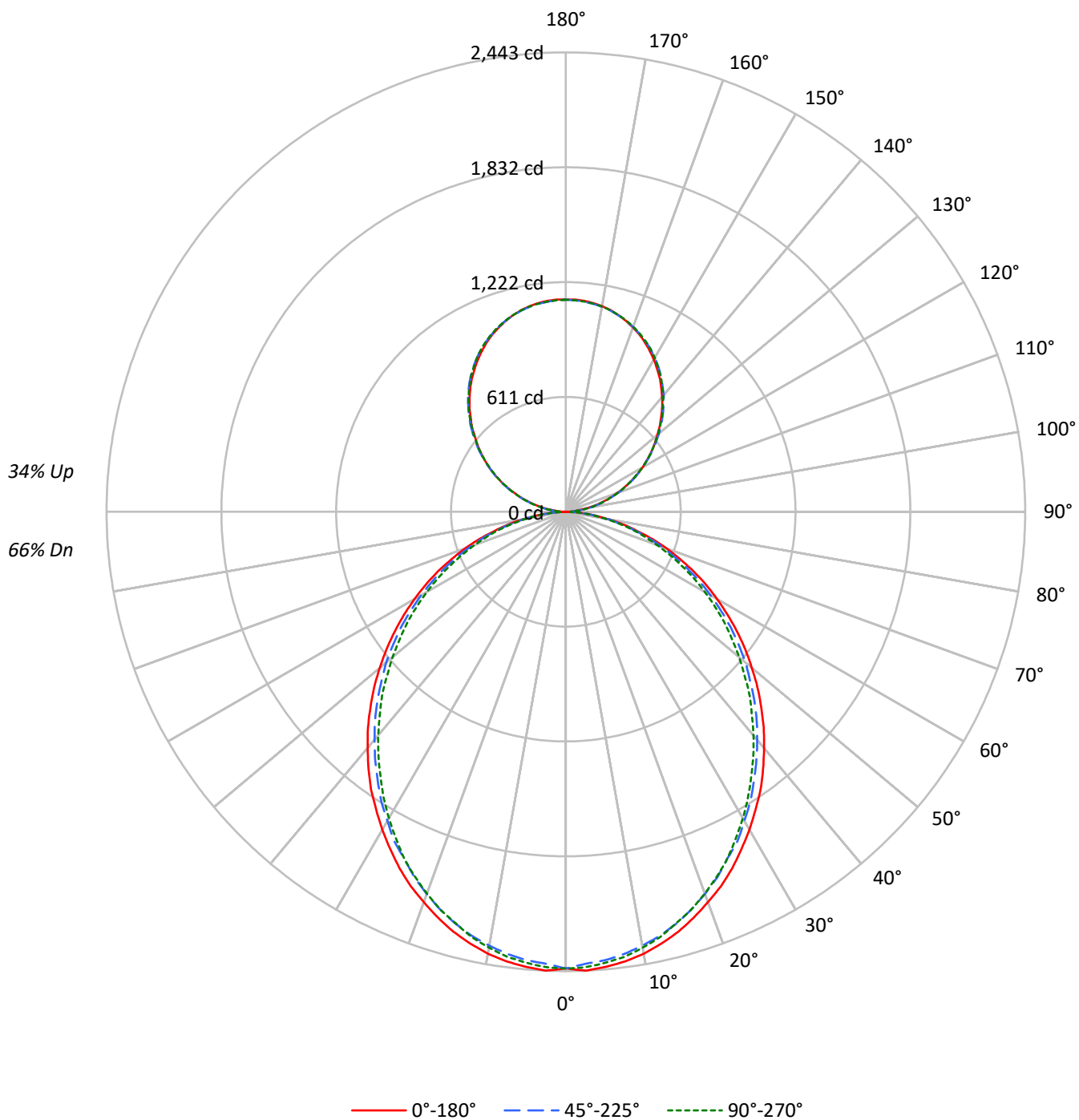
Lumens per Lamp: N/A
Luminaire Lumens: 9336.3 lumens
Efficiency: N/A
Efficacy: 93.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 99.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P923564

CATALOG NUMBER: DFN2DIP-TR3F0-070D040US940-FLLFLL

Luminous Intensity Polar Plot



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CATALOG NUMBER: DFN2DIP-TR3F0-070D040US940-FLLFLL

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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71
1	101	97	93	89	95	91	88	85	81	78	76	72	70	68	63	61	60
2	92	85	78	73	87	80	74	70	71	67	63	63	60	57	55	53	51
3	84	75	67	61	79	70	64	58	63	57	53	56	51	48	49	46	43
4	77	66	58	52	72	63	55	50	56	50	45	50	45	41	44	40	37
5	71	59	51	44	67	56	48	43	50	44	39	45	40	36	40	36	32
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	36	32	29
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	25
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23
9	53	40	32	27	49	38	31	26	34	28	24	31	26	22	28	24	21
10	49	37	29	24	46	35	28	24	32	26	22	29	24	20	26	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3027	3027	3027
5°	3030	2982	3002
10°	3003	2939	2960
15°	2958	2888	2894
20°	2896	2818	2827
25°	2835	2735	2750
30°	2759	2658	2653
35°	2687	2567	2550
40°	2598	2475	2451
45°	2509	2383	2351
50°	2413	2286	2234
55°	2311	2174	2127
60°	2196	2042	2004
65°	2070	1904	1858
70°	1910	1735	1701
75°	1689	1534	1554
80°	1421	1276	1277
85°	1005	840	825

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2509 cd/sqm

TEST NUMBER: P923564

CATALOG NUMBER: DFN2DIP-TR3F0-070D040US940-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	228.6	2.4
10°-20°	643.2	6.9
20°-30°	945.2	10.1
30°-40°	1097.8	11.8
40°-50°	1096.5	11.7
50°-60°	956.1	10.2
60°-70°	706.8	7.6
70°-80°	399.9	4.3
80°-90°	108.8	1.2
90°-100°	69.8	0.7
100°-110°	221.8	2.4
110°-120°	379.5	4.1
120°-130°	499.2	5.3
130°-140°	560.3	6.0
140°-150°	549.4	5.9
150°-160°	460.9	4.9
160°-170°	305.7	3.3
170°-180°	106.8	1.1
0°-30°	1817.0	19.5
0°-40°	2914.9	31.2
0°-60°	4967.4	53.2
0°-90°	6182.8	66.2
90°-120°	671.2	7.2
90°-150°	2280.1	24.4
90°-180°	3153.0	33.8
0°-180°	9336.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2429	2429	2429	2429	2429	
5°	2429	2420	2394	2412	2408	231
15°	2312	2298	2268	2277	2266	651
25°	2093	2074	2034	2039	2034	963
35°	1805	1782	1745	1730	1719	1127
45°	1469	1453	1418	1392	1383	1134
55°	1112	1098	1070	1042	1030	994
65°	750	736	712	691	680	741
75°	392	388	376	362	367	419
85°	96	94	91	84	82	107
90°	1	12	33	31	32	9
95°	50	59	61	61	59	55
105°	205	207	210	211	211	216
115°	381	386	385	384	381	377
125°	554	562	560	557	556	495
135°	717	727	729	728	725	554
145°	870	877	882	883	880	544
155°	995	998	1000	1005	1002	458
165°	1082	1081	1081	1088	1083	305
175°	1126	1123	1121	1128	1122	107
180°	1128	1128	1128	1128	1128	

TEST NUMBER: P923564

CATALOG NUMBER: DFN2DIP-TR3F0-070D040US940-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2428.8	2428.8	2428.8	2428.8	2428.8
2.5°	2442.9	2431.2	2405.5	2428.8	2424.3
5°	2428.8	2419.7	2393.9	2412.4	2408.0
7.5°	2412.4	2398.5	2372.8	2391.7	2386.9
10°	2386.9	2370.5	2342.5	2361.2	2354.2
12.5°	2351.7	2337.9	2309.9	2321.5	2316.8
15°	2312.1	2298.2	2267.7	2277.2	2265.5
17.5°	2263.0	2249.2	2218.7	2230.3	2218.7
20°	2209.2	2195.4	2162.7	2169.6	2160.4
22.5°	2155.7	2134.7	2104.2	2104.2	2099.4
25°	2092.6	2073.9	2034.3	2038.8	2034.3
27.5°	2022.4	2006.1	1975.9	1968.9	1957.2
30°	1952.6	1933.7	1898.8	1891.9	1882.4
32.5°	1877.7	1863.9	1826.4	1812.3	1802.9
35°	1805.4	1782.1	1744.6	1730.5	1718.9
37.5°	1723.6	1702.5	1665.1	1648.8	1637.1
40°	1639.6	1620.8	1583.3	1562.5	1553.1
42.5°	1557.8	1539.0	1501.8	1478.3	1464.4
45°	1469.1	1452.8	1417.6	1392.0	1382.6
47.5°	1382.6	1366.3	1328.8	1303.1	1289.2
50°	1291.5	1279.8	1247.1	1214.4	1202.7
52.5°	1202.7	1186.4	1156.2	1130.4	1114.0
55°	1111.8	1097.7	1069.7	1041.7	1030.0
57.5°	1020.7	1009.0	978.5	950.5	941.1
60°	929.4	920.2	887.6	861.8	854.9
62.5°	840.7	824.4	801.1	777.8	768.4
65°	749.8	735.7	712.4	691.3	679.7
67.5°	656.4	644.5	623.7	607.3	597.9
70°	569.9	560.5	539.4	523.1	513.9
72.5°	481.2	471.8	460.1	443.8	436.8
75°	392.3	387.8	375.9	362.0	366.8
77.5°	313.0	303.5	298.8	291.9	285.0
80°	233.6	231.2	226.5	219.5	214.8
82.5°	158.8	158.8	156.6	147.2	147.2
85°	95.7	93.5	91.2	84.0	81.8
87.5°	42.1	37.5	32.7	25.8	23.3
90°	1.0	12.2	33.3	31.3	32.3
92.5°	21.0	28.5	29.6	30.6	30.6
95°	49.7	59.2	60.9	60.9	59.2
97.5°	82.7	91.5	95.2	95.2	95.2
100°	120.7	128.6	131.3	131.3	130.3
102.5°	160.9	166.7	170.4	171.4	170.4
105°	204.7	207.4	209.5	211.2	211.2
107.5°	248.3	252.4	252.4	253.0	248.3
110°	290.4	295.9	295.9	295.9	293.2



TEST NUMBER: P923564

CATALOG NUMBER: DFN2DIP-TR3F0-070D040US940-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	336.0	341.8	340.7	338.0	336.0
115°	380.8	386.4	384.6	383.6	380.8
117.5°	425.4	432.9	428.2	425.4	422.8
120°	470.4	477.8	470.4	470.4	467.3
122.5°	511.1	520.7	515.9	513.2	511.1
125°	554.0	562.5	559.8	556.7	555.7
127.5°	595.8	606.4	602.6	598.5	595.8
130°	634.9	647.2	645.5	643.5	639.7
132.5°	678.8	688.3	689.0	684.2	681.5
135°	716.6	727.1	729.2	728.1	725.4
137.5°	758.8	767.2	768.9	768.2	764.2
140°	795.8	804.3	809.0	809.0	805.3
142.5°	833.9	842.4	845.1	846.1	842.4
145°	870.0	876.7	882.2	883.2	879.5
147.5°	902.2	910.7	914.8	916.5	912.8
150°	935.6	941.4	945.1	948.2	945.1
152.5°	965.2	970.9	975.7	979.5	975.7
155°	994.7	997.5	1000.5	1005.3	1002.2
157.5°	1020.3	1022.3	1024.0	1030.8	1026.0
160°	1043.0	1045.1	1046.1	1051.9	1047.8
162.5°	1064.1	1064.1	1065.1	1071.6	1066.8
165°	1082.2	1081.1	1081.1	1087.9	1083.2
167.5°	1098.5	1095.4	1095.4	1102.2	1097.4
170°	1110.7	1108.0	1107.0	1113.7	1108.0
172.5°	1119.2	1116.5	1115.4	1122.3	1116.5
175°	1126.1	1123.3	1121.2	1128.0	1122.3
177.5°	1129.8	1127.0	1125.0	1130.8	1125.0
180°	1128.0	1128.0	1128.0	1128.0	1128.0

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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	12.44	13.47	13.25	14.30	15.32	12.02	13.04	12.82	13.87	14.89
	3H	14.11	15.03	14.92	15.87	16.92	13.64	14.56	14.46	15.40	16.45
	4H	14.70	15.57	15.53	16.41	17.47	14.23	15.10	15.06	15.94	17.00
	6H	15.10	15.90	15.94	16.75	17.83	14.63	15.43	15.47	16.28	17.36
	8H	15.20	15.97	16.06	16.84	17.91	14.73	15.50	15.59	16.37	17.44
	12H	15.25	15.98	16.11	16.85	17.95	14.78	15.51	15.64	16.37	17.47
4H	2H	12.92	13.79	13.76	14.64	15.70	12.58	13.45	13.42	14.30	15.35
	3H	14.79	15.52	15.64	16.40	17.47	14.40	15.13	15.25	16.01	17.08
	4H	15.51	16.17	16.37	17.04	18.15	15.10	15.77	15.97	16.64	17.74
	6H	16.02	16.60	16.90	17.49	18.60	15.62	16.19	16.50	17.09	18.19
	8H	16.17	16.71	17.05	17.60	18.72	15.76	16.30	16.65	17.19	18.31
	12H	16.25	16.73	17.15	17.64	18.77	15.83	16.32	16.73	17.23	18.35
8H	4H	15.71	16.25	16.59	17.14	18.26	15.35	15.89	16.24	16.78	17.90
	6H	16.34	16.78	17.25	17.72	18.84	15.98	16.43	16.89	17.36	18.48
	8H	16.55	16.95	17.47	17.88	19.01	16.19	16.59	17.11	17.51	18.65
	12H	16.69	17.04	17.61	17.96	19.14	16.31	16.66	17.23	17.58	18.76
12H	4H	15.70	16.19	16.61	17.10	18.22	15.36	15.84	16.26	16.75	17.87
	6H	16.37	16.76	17.29	17.69	18.83	16.02	16.42	16.94	17.34	18.48
	8H	16.61	16.96	17.53	17.88	19.06	16.26	16.61	17.18	17.53	18.71