

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: P904280

Luminaire Tested: DFN2DIP-TR2F0-030D020US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904280
REPORT IS A COMBINATION OF REPORTS P900223 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-030D020US830-FLLFLL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

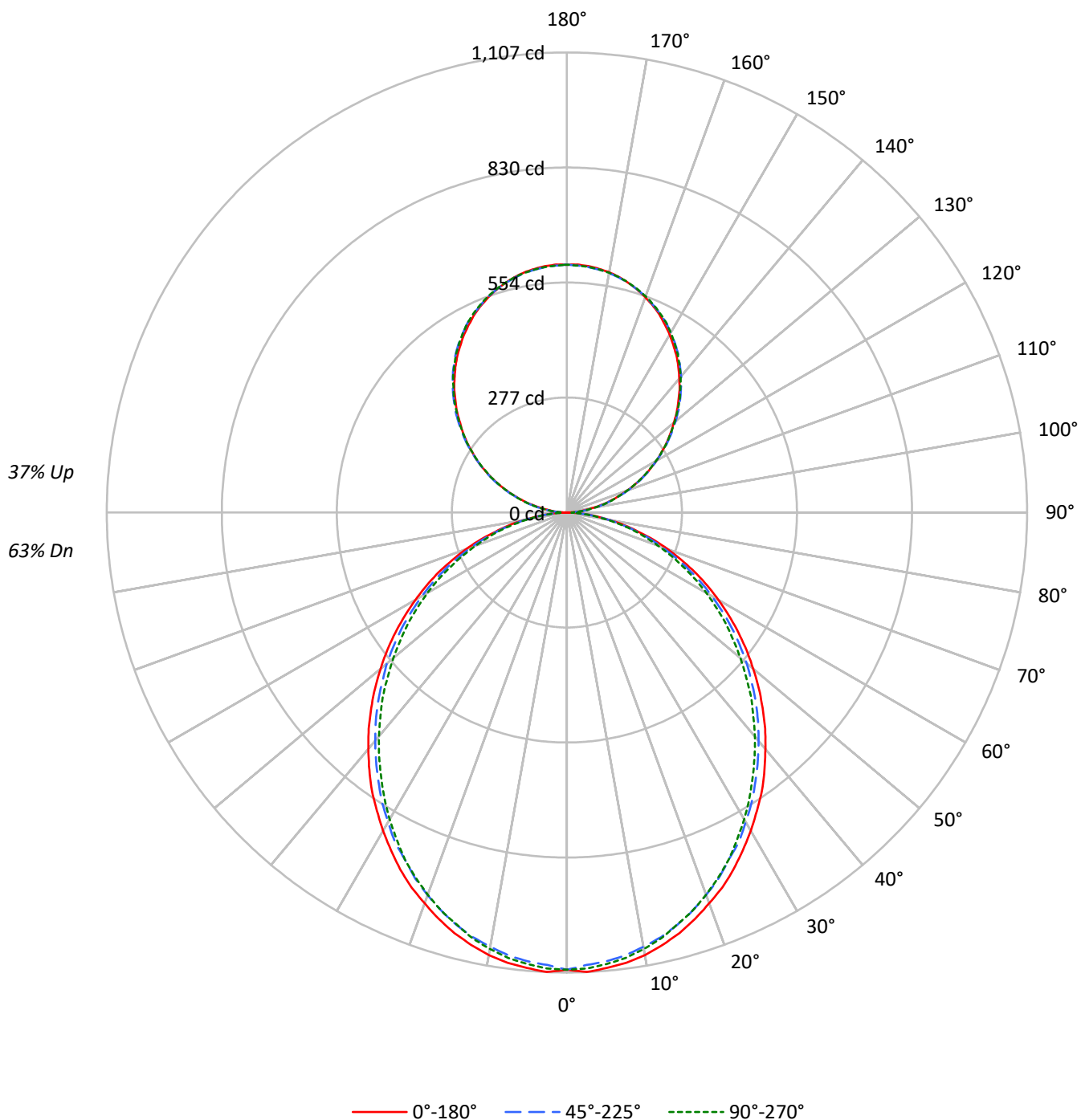
Lumens per Lamp: N/A
Luminaire Lumens: 4467.7 lumens
Efficiency: N/A
Efficacy: 110.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 40.5
Input Voltage (V): 120
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

TEST NUMBER: P904280

CATALOG NUMBER: DFN2DIP-TR2F0-030D020US830-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P904280

CATALOG NUMBER: DFN2DIP-TR2F0-030D020US830-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	110	110	110	110	103	103	103	103	90	90	90	79	79	79	68	68	68
1	101	96	92	89	94	90	87	84	79	77	74	69	67	66	60	59	57
2	92	84	78	72	86	79	73	69	70	65	62	61	58	55	53	50	48
3	84	74	66	60	78	70	63	58	61	56	52	54	50	46	47	44	41
4	77	66	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35
5	70	58	50	44	66	55	48	42	49	43	38	43	38	35	38	34	31
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27
7	60	48	39	34	56	45	38	32	40	34	30	36	31	27	31	27	24
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22
9	52	40	32	27	49	38	30	26	34	28	24	30	25	22	27	23	20
10	49	36	29	24	46	35	28	23	31	25	21	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2454	2454	2454
5°	2454	2414	2432
10°	2431	2376	2395
15°	2391	2332	2339
20°	2339	2272	2282
25°	2288	2202	2217
30°	2224	2136	2136
35°	2163	2059	2050
40°	2088	1981	1968
45°	2014	1903	1883
50°	1932	1820	1787
55°	1847	1725	1696
60°	1750	1613	1593
65°	1644	1496	1471
70°	1508	1354	1338
75°	1322	1183	1211
80°	1096	964	979
85°	748	608	607

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2014 cd/sqm

TEST NUMBER: P904280

CATALOG NUMBER: DFN2DIP-TR2F0-030D020US830-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.6	2.3
10°-20°	291.4	6.5
20°-30°	428.2	9.6
30°-40°	497.3	11.1
40°-50°	496.7	11.1
50°-60°	433.1	9.7
60°-70°	320.2	7.2
70°-80°	181.1	4.1
80°-90°	49.5	1.1
90°-100°	36.9	0.8
100°-110°	117.2	2.6
110°-120°	200.6	4.5
120°-130°	263.8	5.9
130°-140°	296.1	6.6
140°-150°	290.4	6.5
150°-160°	243.6	5.5
160°-170°	161.5	3.6
170°-180°	56.5	1.3
0°-30°	823.1	18.4
0°-40°	1320.4	29.6
0°-60°	2250.3	50.4
0°-90°	2801.1	62.7
90°-120°	354.7	7.9
90°-150°	1205.0	27.0
90°-180°	1667.0	37.3
0°-180°	4467.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1100	1100	1100	1100	1100	
5°	1100	1096	1084	1093	1091	104
15°	1047	1041	1027	1032	1026	295
25°	948	940	922	924	922	436
35°	818	807	790	784	779	511
45°	666	658	642	631	626	514
55°	504	497	485	472	467	450
65°	340	333	323	313	308	336
75°	178	176	170	164	166	190
85°	43	42	41	38	37	48
90°	1	6	18	16	17	4
95°	26	31	32	32	31	29
105°	108	110	111	112	112	114
115°	201	204	203	203	201	199
125°	293	297	296	294	294	262
135°	379	384	385	385	383	293
145°	460	463	466	467	465	287
155°	526	527	529	531	530	242
165°	572	571	571	575	572	161
175°	595	594	593	596	593	57
180°	596	596	596	596	596	

TEST NUMBER: P904280

CATALOG NUMBER: DFN2DIP-TR2F0-030D020US830-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1100.2	1100.2	1100.2	1100.2	1100.2
2.5°	1106.6	1101.4	1089.7	1100.2	1098.3
5°	1100.2	1096.1	1084.4	1092.9	1090.8
7.5°	1092.9	1086.6	1074.9	1083.5	1081.3
10°	1081.3	1073.8	1061.2	1069.6	1066.5
12.5°	1065.4	1059.0	1046.4	1051.6	1049.5
15°	1047.4	1041.1	1027.3	1031.5	1026.2
17.5°	1025.1	1018.9	1005.0	1010.3	1005.0
20°	1000.8	994.5	979.7	982.8	978.6
22.5°	976.6	967.0	953.2	953.2	951.0
25°	947.9	939.5	921.5	923.6	921.5
27.5°	916.2	908.7	895.0	891.9	886.6
30°	884.5	876.0	860.2	857.0	852.7
32.5°	850.6	844.3	827.4	821.0	816.7
35°	817.8	807.3	790.3	783.9	778.6
37.5°	780.8	771.3	754.3	746.9	741.6
40°	742.7	734.2	717.3	707.8	703.6
42.5°	705.7	697.2	680.3	669.7	663.4
45°	665.5	658.1	642.2	630.6	626.3
47.5°	626.3	619.0	602.0	590.3	584.0
50°	585.0	579.8	565.0	550.2	544.9
52.5°	544.9	537.4	523.8	512.1	504.6
55°	503.7	497.3	484.6	471.9	466.7
57.5°	462.3	457.0	443.3	430.6	426.3
60°	421.0	416.9	402.1	390.4	387.3
62.5°	380.9	373.4	362.9	352.3	348.1
65°	339.7	333.3	322.7	313.2	307.9
67.5°	297.4	292.0	282.5	275.1	270.9
70°	258.2	253.9	244.4	237.0	232.8
72.5°	218.0	213.7	208.4	201.0	197.9
75°	177.7	175.7	170.3	164.0	166.2
77.5°	141.8	137.5	135.3	132.2	129.1
80°	105.8	104.7	102.5	99.4	97.4
82.5°	71.9	71.9	71.0	66.6	66.6
85°	43.4	42.3	41.3	38.1	37.0
87.5°	19.0	17.0	14.8	11.7	10.6
90°	0.6	6.5	17.6	16.5	17.1
92.5°	11.1	15.1	15.6	16.2	16.2
95°	26.2	31.3	32.1	32.1	31.3
97.5°	43.6	48.4	50.3	50.3	50.3
100°	63.8	68.0	69.4	69.4	68.8
102.5°	85.0	88.0	90.0	90.6	90.0
105°	108.2	109.6	110.7	111.6	111.6
107.5°	131.2	133.4	133.4	133.7	131.2
110°	153.5	156.4	156.4	156.4	155.0

TEST NUMBER: P904280

CATALOG NUMBER: DFN2DIP-TR2F0-030D020US830-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	177.6	180.6	180.1	178.6	177.6
115°	201.3	204.2	203.3	202.7	201.3
117.5°	224.9	228.8	226.3	224.9	223.4
120°	248.5	252.5	248.5	248.5	246.9
122.5°	270.1	275.1	272.7	271.3	270.1
125°	292.8	297.3	295.9	294.3	293.7
127.5°	314.9	320.5	318.5	316.3	314.9
130°	335.5	342.0	341.1	340.1	338.1
132.5°	358.7	363.8	364.1	361.7	360.1
135°	378.7	384.3	385.3	384.8	383.3
137.5°	401.0	405.5	406.4	406.0	403.9
140°	420.6	425.1	427.6	427.6	425.7
142.5°	440.7	445.2	446.7	447.1	445.2
145°	459.8	463.4	466.3	466.7	464.8
147.5°	476.8	481.4	483.5	484.4	482.4
150°	494.5	497.5	499.5	501.1	499.5
152.5°	510.1	513.1	515.7	517.6	515.7
155°	525.8	527.2	528.8	531.3	529.7
157.5°	539.2	540.3	541.2	544.8	542.2
160°	551.3	552.3	552.9	555.9	553.7
162.5°	562.4	562.4	562.9	566.4	563.8
165°	571.9	571.4	571.4	575.0	572.5
167.5°	580.5	578.9	578.9	582.5	580.0
170°	587.0	585.6	585.0	588.6	585.6
172.5°	591.5	590.0	589.6	593.1	590.0
175°	595.1	593.7	592.6	596.2	593.1
177.5°	597.1	595.7	594.6	597.6	594.6
180°	596.2	596.2	596.2	596.2	596.2

TEST NUMBER: P904280

CATALOG NUMBER: DFN2DIP-TR2F0-030D020US830-FLLFLL

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	11.36	12.34	12.20	13.21	14.28	10.93	11.92	11.77	12.78	13.86
	3H	13.00	13.89	13.86	14.76	15.87	12.54	13.43	13.39	14.30	15.41
	4H	13.58	14.42	14.45	15.30	16.41	13.12	13.96	13.99	14.84	15.95
	6H	13.97	14.74	14.85	15.63	16.76	13.51	14.28	14.39	15.17	16.30
	8H	14.07	14.80	14.96	15.71	16.84	13.61	14.35	14.50	15.25	16.38
	12H	14.11	14.81	15.01	15.71	16.86	13.65	14.35	14.54	15.25	16.40
4H	2H	11.82	12.66	12.70	13.54	14.66	11.49	12.32	12.36	13.20	14.32
	3H	13.67	14.37	14.56	15.28	16.42	13.29	13.99	14.18	14.90	16.03
	4H	14.38	15.01	15.27	15.92	17.08	13.98	14.62	14.88	15.53	16.68
	6H	14.88	15.43	15.79	16.36	17.52	14.48	15.03	15.39	15.96	17.12
	8H	15.02	15.53	15.93	16.46	17.63	14.62	15.13	15.53	16.06	17.23
	12H	15.08	15.55	16.02	16.49	17.67	14.68	15.14	15.61	16.09	17.26
8H	4H	14.57	15.09	15.49	16.01	17.18	14.22	14.74	15.13	15.66	16.83
	6H	15.18	15.61	16.12	16.57	17.74	14.83	15.26	15.77	16.22	17.39
	8H	15.39	15.76	16.34	16.72	17.91	15.03	15.41	15.98	16.37	17.55
	12H	15.51	15.84	16.46	16.79	18.03	15.14	15.47	16.09	16.42	17.66
12H	4H	14.56	15.03	15.49	15.97	17.15	14.22	14.68	15.15	15.63	16.80
	6H	15.21	15.59	16.16	16.54	17.73	14.87	15.24	15.82	16.20	17.39
	8H	15.44	15.77	16.39	16.72	17.96	15.09	15.42	16.04	16.37	17.61

END OF REPORT