

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: P916062

Luminaire Tested: DFN2DIP-HX2F0-020D030US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916062
REPORT IS A COMBINATION OF REPORTS P899161 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-020D030US930-FLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

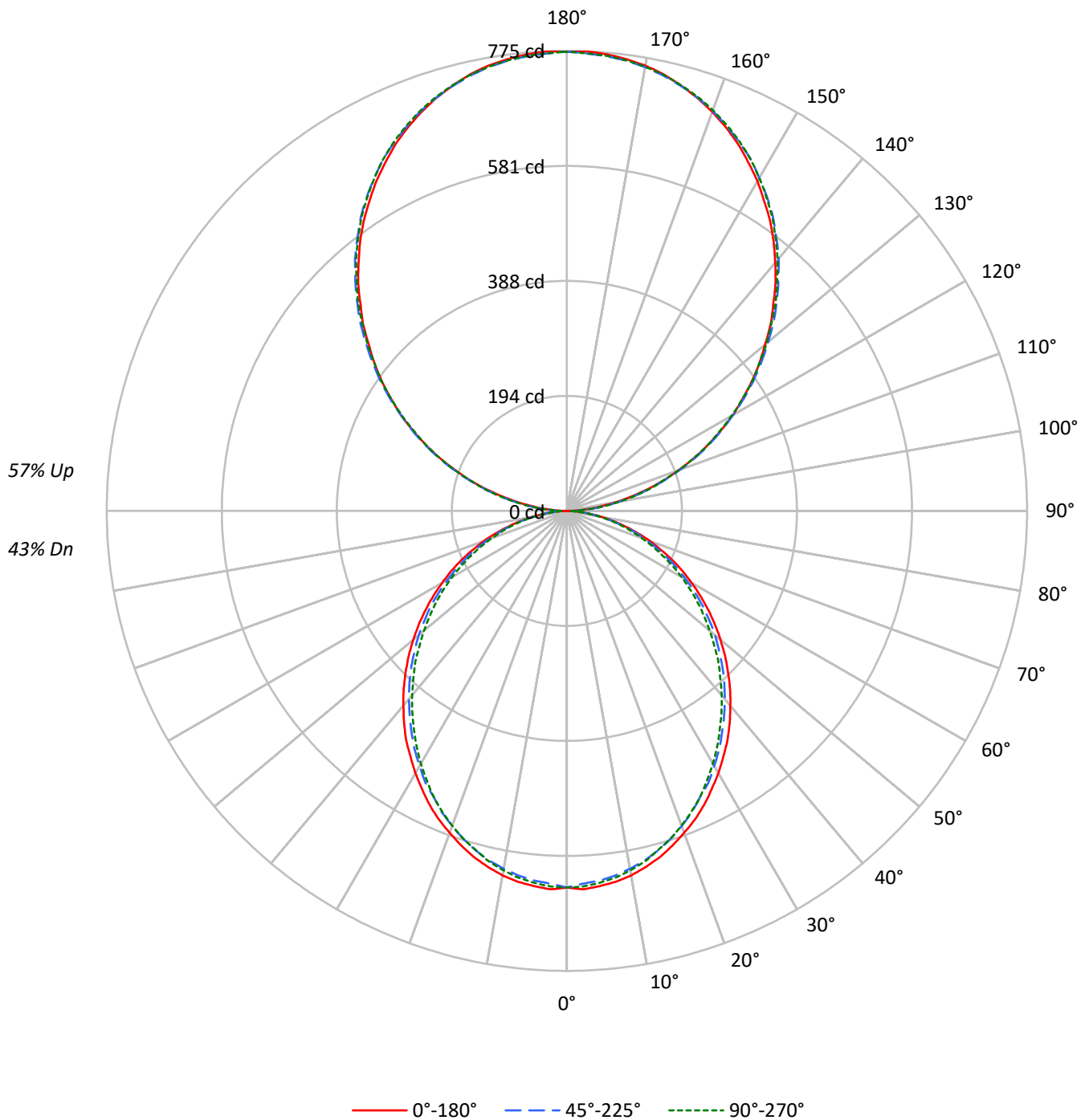
Lumens per Lamp: N/A
Luminaire Lumens: 3778.9 lumens
Efficiency: N/A
Efficacy: 102.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 37
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P916062

CATALOG NUMBER: DFN2DIP-HX2F0-020D030US930-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P916062

CATALOG NUMBER: DFN2DIP-HX2F0-020D030US930-FLLFL

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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	49	49	49
1	96	92	88	85	88	84	81	78	69	67	65	56	54	53	44	43	42
2	88	80	74	69	80	73	68	64	61	57	54	49	47	44	38	37	35
3	80	70	63	57	73	65	58	53	54	49	45	44	40	37	34	32	30
4	73	62	55	49	66	57	50	45	48	43	39	39	35	32	30	28	26
5	67	56	47	42	61	51	44	39	43	37	33	35	31	28	27	25	22
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	25	22	20
7	57	45	37	31	52	41	34	29	35	29	25	29	24	21	23	20	18
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	27	22	18	22	18	15	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1495	1495	1495
5°	1495	1470	1481
10°	1480	1447	1458
15°	1456	1420	1424
20°	1424	1383	1389
25°	1393	1340	1350
30°	1354	1300	1300
35°	1317	1253	1248
40°	1271	1205	1197
45°	1225	1157	1146
50°	1176	1107	1087
55°	1123	1048	1031
60°	1064	980	968
65°	998	908	894
70°	916	821	813
75°	803	717	734
80°	665	584	592
85°	449	366	367

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1225 cd/sqm

TEST NUMBER: P916062

CATALOG NUMBER: DFN2DIP-HX2F0-020D030US930-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.7	1.6
10°-20°	168.0	4.4
20°-30°	246.9	6.5
30°-40°	286.8	7.6
40°-50°	286.4	7.6
50°-60°	249.7	6.6
60°-70°	184.6	4.9
70°-80°	104.5	2.8
80°-90°	29.8	0.8
90°-100°	47.9	1.3
100°-110°	152.1	4.0
110°-120°	260.3	6.9
120°-130°	342.3	9.1
130°-140°	384.2	10.2
140°-150°	376.8	10.0
150°-160°	316.1	8.4
160°-170°	209.6	5.5
170°-180°	73.3	1.9
0°-30°	474.7	12.6
0°-40°	761.5	20.2
0°-60°	1297.6	34.3
0°-90°	1616.5	42.8
90°-120°	460.2	12.2
90°-150°	1563.5	41.4
90°-180°	2162.0	57.2
0°-180°	3778.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	634	634	634	634	634	
5°	634	632	625	630	629	60
15°	604	600	592	595	592	170
25°	547	542	531	533	531	252
35°	472	466	456	452	449	295
45°	384	380	370	364	361	296
55°	290	287	279	272	269	260
65°	196	192	186	181	178	194
75°	102	101	98	95	96	109
85°	25	24	24	22	21	28
90°	1	8	23	21	22	4
95°	34	41	42	42	41	38
105°	140	142	144	145	145	148
115°	261	265	264	263	261	258
125°	380	386	384	382	381	339
135°	491	499	500	499	497	380
145°	597	601	605	606	603	373
155°	682	684	686	689	687	314
165°	742	741	741	746	743	209
175°	772	770	769	774	770	73
180°	774	774	774	774	774	

TEST NUMBER: P916062

CATALOG NUMBER: DFN2DIP-HX2F0-020D030US930-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	634.5	634.5	634.5	634.5	634.5
2.5°	638.1	635.1	628.4	634.5	633.3
5°	634.5	632.1	625.3	630.2	629.0
7.5°	630.2	626.6	619.9	624.8	623.5
10°	623.5	619.3	612.0	616.8	615.0
12.5°	614.3	610.7	603.4	606.4	605.2
15°	604.0	600.4	592.4	594.8	591.8
17.5°	591.2	587.6	579.6	582.6	579.6
20°	577.1	573.5	564.9	566.8	564.3
22.5°	563.1	557.7	549.7	549.7	548.5
25°	546.7	541.8	531.4	532.6	531.4
27.5°	528.3	524.1	516.2	514.4	511.3
30°	510.1	505.2	496.0	494.2	491.7
32.5°	490.5	486.9	477.1	473.4	471.0
35°	471.7	465.5	455.8	452.1	449.0
37.5°	450.3	444.7	435.0	430.7	427.6
40°	428.3	423.4	413.6	408.2	405.7
42.5°	406.9	402.0	392.3	386.2	382.5
45°	383.8	379.5	370.3	363.6	361.2
47.5°	361.2	356.9	347.2	340.4	336.8
50°	337.4	334.4	325.8	317.2	314.2
52.5°	314.2	309.9	302.0	295.3	291.1
55°	290.4	286.7	279.4	272.1	269.0
57.5°	266.6	263.6	255.6	248.3	245.8
60°	242.8	240.4	231.9	225.1	223.3
62.5°	219.6	215.3	209.3	203.2	200.7
65°	195.8	192.2	186.1	180.6	177.6
67.5°	171.5	168.4	162.9	158.7	156.2
70°	148.9	146.4	140.9	136.6	134.3
72.5°	125.7	123.3	120.2	115.9	114.1
75°	102.5	101.3	98.2	94.6	95.8
77.5°	81.8	79.3	78.0	76.2	74.4
80°	61.1	60.4	59.2	57.3	56.1
82.5°	41.5	41.5	40.9	38.5	38.5
85°	24.9	24.4	23.8	21.9	21.4
87.5°	11.0	9.8	8.6	6.8	6.1
90°	0.7	8.4	22.8	21.4	22.2
92.5°	14.4	19.6	20.3	21.0	21.0
95°	34.1	40.6	41.7	41.7	40.6
97.5°	56.7	62.7	65.3	65.3	65.3
100°	82.8	88.1	90.0	90.0	89.4
102.5°	110.3	114.3	116.8	117.6	116.8
105°	140.4	142.3	143.7	144.8	144.8
107.5°	170.2	173.0	173.0	173.5	170.2
110°	199.2	202.9	202.9	202.9	201.1

TEST NUMBER: P916062

CATALOG NUMBER: DFN2DIP-HX2F0-020D030US930-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	230.4	234.4	233.7	231.8	230.4
115°	261.2	264.9	263.7	263.1	261.2
117.5°	291.7	296.9	293.6	291.7	289.8
120°	322.5	327.7	322.5	322.5	320.4
122.5°	350.5	357.0	353.8	351.9	350.5
125°	379.9	385.7	383.8	381.7	381.1
127.5°	408.5	415.8	413.3	410.4	408.5
130°	435.4	443.8	442.6	441.2	438.6
132.5°	465.5	472.0	472.5	469.2	467.3
135°	491.4	498.6	500.0	499.3	497.4
137.5°	520.2	526.1	527.3	526.8	524.0
140°	545.7	551.5	554.8	554.8	552.2
142.5°	571.9	577.6	579.5	580.2	577.6
145°	596.6	601.2	605.0	605.6	603.1
147.5°	618.7	624.5	627.3	628.5	625.9
150°	641.6	645.6	648.1	650.2	648.1
152.5°	661.9	665.8	669.0	671.6	669.0
155°	682.2	684.0	686.1	689.3	687.3
157.5°	699.6	701.0	702.2	706.9	703.6
160°	715.3	716.6	717.4	721.3	718.5
162.5°	729.7	729.7	730.4	734.8	731.6
165°	742.1	741.4	741.4	746.0	742.7
167.5°	753.3	751.1	751.1	755.8	752.5
170°	761.7	759.8	759.1	763.8	759.8
172.5°	767.4	765.6	764.9	769.6	765.6
175°	772.2	770.3	768.9	773.6	769.6
177.5°	774.7	772.8	771.4	775.4	771.4
180°	773.6	773.6	773.6	773.6	773.6

TEST NUMBER: P916062

CATALOG NUMBER: DFN2DIP-HX2F0-020D030US930-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	7.82	8.62	8.84	9.65	11.02	7.40	8.20	8.42	9.23	10.60
	3H	9.45	10.17	10.48	11.21	12.60	8.99	9.71	10.02	10.75	12.14
	4H	10.02	10.70	11.06	11.74	13.14	9.56	10.24	10.60	11.28	12.68
	6H	10.40	11.03	11.45	12.07	13.48	9.94	10.57	10.99	11.61	13.02
	8H	10.49	11.09	11.55	12.15	13.55	10.03	10.63	11.09	11.69	13.09
	12H	10.53	11.10	11.59	12.15	13.58	10.07	10.63	11.13	11.69	13.12
4H	2H	8.27	8.95	9.31	9.98	11.38	7.93	8.61	8.97	9.65	11.04
	3H	10.10	10.67	11.15	11.73	13.14	9.72	10.28	10.77	11.35	12.76
	4H	10.79	11.31	11.85	12.37	13.80	10.40	10.92	11.46	11.97	13.41
	6H	11.28	11.73	12.35	12.81	14.23	10.88	11.33	11.95	12.41	13.84
	8H	11.42	11.83	12.49	12.91	14.35	11.02	11.44	12.09	12.51	13.95
	12H	11.47	11.85	12.56	12.94	14.39	11.07	11.45	12.16	12.53	13.98
8H	4H	10.97	11.39	12.04	12.46	13.90	10.62	11.04	11.69	12.11	13.55
	6H	11.57	11.92	12.66	13.03	14.47	11.22	11.56	12.31	12.68	14.12
	8H	11.77	12.08	12.87	13.17	14.63	11.42	11.72	12.52	12.82	14.28
	12H	11.89	12.15	12.99	13.25	14.75	11.52	11.78	12.62	12.88	14.38
12H	4H	10.95	11.33	12.04	12.42	13.86	10.61	10.99	11.70	12.07	13.52
	6H	11.60	11.90	12.70	13.00	14.46	11.25	11.56	12.35	12.65	14.11
	8H	11.82	12.08	12.92	13.17	14.67	11.47	11.74	12.57	12.83	14.33