

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P29163

Luminaire Tested: **H12-LD4-20W-40-OPL-EDC1**

Test Date: 12/20/16



Test Information

Test Method: LM-79-08
Report Number: P29163
Test Lab: INNOVATION CENTER-P2
Test Date: 12/20/16
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: H12-LD4-20W-40-OPL-EDC1
Description: H12 LED FIXTURE WITH OPAL LENS
Light Source: (56) NICHIA 4000K LEDS
1FS402256M8404
Ballast/Driver: (1) OSRAM ELECTRONIC DRIVER (450mA)
OT40W-UNV-1250C

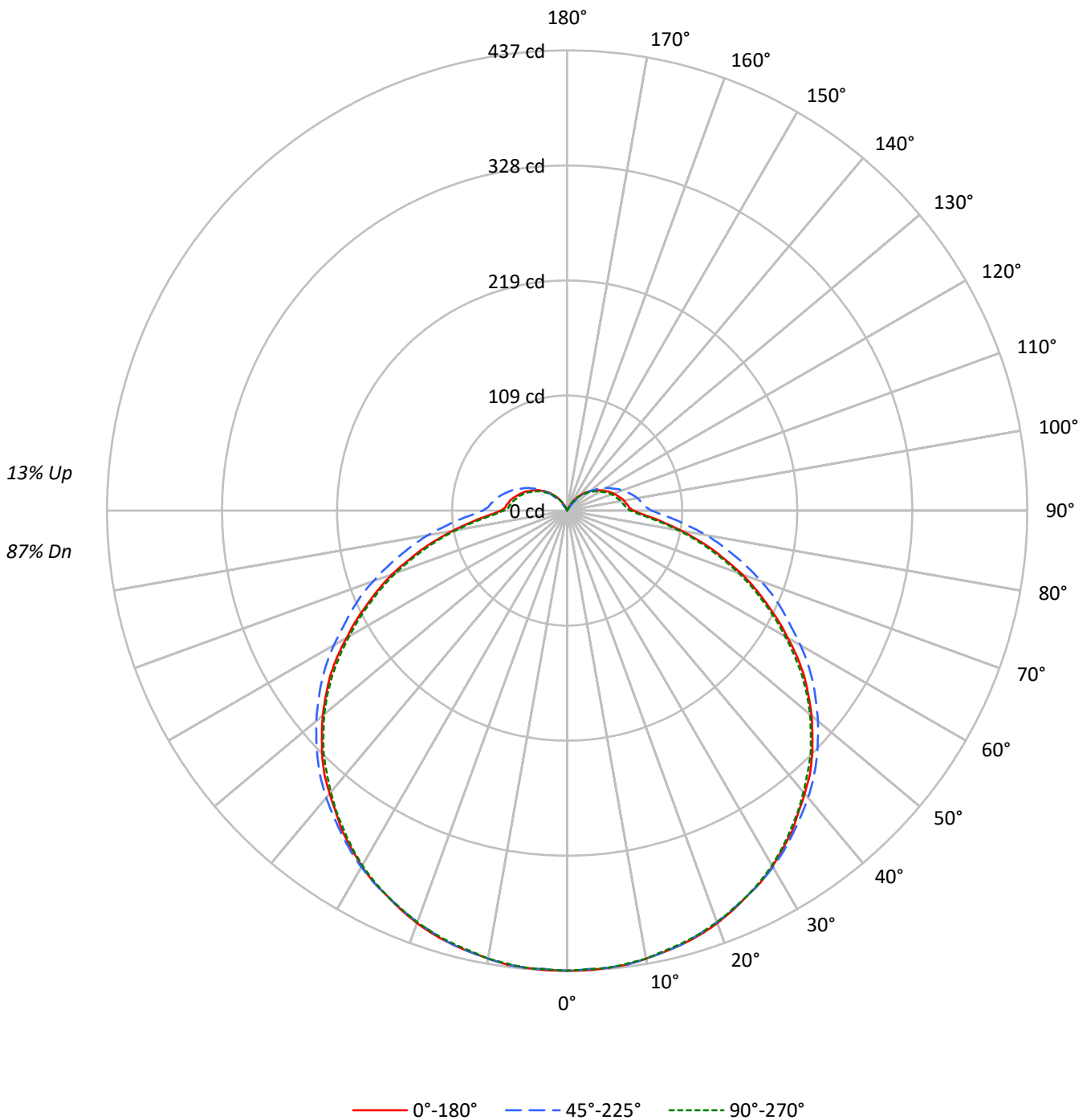
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1799.4 lumens
Efficiency: N/A
Efficacy: 83.7 lumens/watt
Spacing Criteria (0/90/45): 1.33 / 1.32 / 1.47
Luminous Opening: Rectangular w/ Sides (W: 0.83' x L: 0.83' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 21.5
Input Voltage (V): 120.0
Input Current (A_{in}): 180.0
Voltage Rise (V): NR
Power Factor: 0.9974
Total Harmonic Distortion (THDi): 6.66%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): 25.1
Test Distance: 25 FT

TEST NUMBER: P29163
CATALOG NUMBER: H12-LD4-20W-40-OPL-EDC1

Luminous Intensity Polar Plot





TEST NUMBER: P29163

CATALOG NUMBER: H12-LD4-20W-40-OPL-EDC1

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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	116	116	116	116	112	112	112	112	104	104	104	97	97	97	90	90	90	87				
1	104	98	93	88	99	94	90	86	88	84	80	82	79	76	76	74	71	68				
2	93	84	76	70	89	81	74	68	75	70	65	70	65	61	65	61	58	55				
3	84	73	64	57	81	70	62	56	66	59	53	61	55	51	57	52	48	45				
4	77	64	55	48	74	62	53	47	58	50	45	54	48	43	50	45	41	38				
5	70	57	47	41	67	55	46	40	51	44	38	48	42	36	45	39	35	32				
6	65	51	42	35	62	49	41	34	46	39	33	43	37	32	41	35	30	28				
7	60	46	37	31	57	45	36	30	42	34	29	39	33	28	37	31	27	25				
8	56	42	33	27	53	41	32	27	38	31	26	36	29	25	34	28	24	22				
9	52	38	30	24	50	37	29	24	35	28	23	33	27	22	31	26	21	19				
10	49	35	27	22	47	34	27	21	32	25	21	31	24	20	29	23	19	18				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6774	6774	6774
5°	6500	6389	6500
10°	6248	6046	6248
15°	6028	5747	6014
20°	5819	5457	5805
25°	5603	5196	5603
30°	5417	4969	5403
35°	5214	4733	5186
40°	5003	4521	4975
45°	4808	4302	4779
50°	4578	4070	4548
55°	4336	3832	4288
60°	4020	3567	3970
65°	3699	3294	3646
70°	3379	3018	3303
75°	2988	2699	2904
80°	2560	2387	2490
85°	2172	2036	2066



TEST NUMBER: P29163

CATALOG NUMBER: H12-LD4-20W-40-OPL-EDC1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.5	2.3
10°-20°	120.3	6.7
20°-30°	186.4	10.4
30°-40°	233.0	12.9
40°-50°	255.4	14.2
50°-60°	249.7	13.9
60°-70°	216.0	12.0
70°-80°	163.8	9.1
80°-90°	104.3	5.8
90°-100°	71.8	4.0
100°-110°	59.1	3.3
110°-120°	44.6	2.5
120°-130°	29.9	1.7
130°-140°	16.6	0.9
140°-150°	6.4	0.4
150°-160°	0.7	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	348.2	19.3
0°-40°	581.2	32.3
0°-60°	1086.3	60.4
0°-90°	1570.3	87.3
90°-120°	175.5	9.8
90°-150°	228.4	12.7
90°-180°	229.0	12.7
0°-180°	1799.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	437	437	437	437	437	
5°	436	436	436	436	436	42
15°	426	426	426	425	425	120
25°	404	404	404	403	404	187
35°	372	372	374	371	370	233
45°	329	332	335	330	327	254
55°	275	281	285	280	272	245
65°	209	220	226	218	206	207
75°	143	158	164	156	139	151
85°	82	97	104	96	78	73
90°	63	74	80	72	60	35
95°	58	68	73	66	55	47
105°	51	57	62	56	48	54
115°	43	45	49	44	41	42
125°	34	34	36	32	32	30
135°	24	20	22	20	22	18
145°	13	10	6	10	12	8
155°	2	0	0	0	2	1
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P29163

CATALOG NUMBER: H12-LD4-20W-40-OPL-EDC1

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	437	437	437	437	437	437	437	437	437	437	437
2.5°	437	437	436	436	436	436	436	436	436	436	436
5°	436	436	436	436	436	436	436	436	436	436	436
7.5°	435	435	435	435	435	435	435	435	435	435	434
10°	432	432	432	432	432	432	431	432	432	432	432
12.5°	429	429	428	428	429	429	429	428	429	429	428
15°	426	426	426	426	426	426	426	425	426	426	425
17.5°	422	422	422	421	421	421	421	421	422	422	421
20°	417	417	417	416	416	416	415	416	416	417	416
22.5°	411	411	410	410	410	410	409	410	410	410	410
25°	404	405	404	404	404	404	404	403	403	404	404
27.5°	398	398	398	398	398	398	397	396	396	397	397
30°	390	390	389	390	390	391	390	389	388	388	389
32.5°	381	381	381	381	382	383	382	380	380	379	380
35°	372	371	372	372	374	374	373	371	370	370	370
37.5°	361	361	362	363	365	365	364	362	360	360	360
40°	351	351	352	353	355	356	355	352	350	349	349
42.5°	341	340	341	343	345	346	344	342	339	338	338
45°	329	328	330	332	334	335	334	331	328	326	327
47.5°	316	316	318	321	322	323	322	319	316	314	314
50°	303	303	305	308	310	311	310	307	303	301	301
52.5°	289	289	292	295	297	298	297	294	290	287	287
55°	275	275	278	282	284	285	284	281	276	273	272
57.5°	259	259	263	268	270	271	270	266	261	256	256
60°	242	242	247	253	255	256	254	250	245	240	239
62.5°	226	227	232	237	240	240	239	235	229	224	223
65°	209	210	216	221	225	226	224	220	214	207	206
67.5°	193	194	200	206	210	212	209	204	198	190	190
70°	177	177	184	190	195	196	194	188	181	175	173
72.5°	159	161	168	175	180	180	179	173	165	158	156
75°	143	144	151	160	164	164	163	158	150	141	139
77.5°	126	128	136	145	148	149	147	142	134	125	123
80°	110	112	121	129	133	134	132	127	119	109	107
82.5°	95	97	106	114	118	118	116	112	104	94	92
85°	82	83	92	99	102	104	102	98	90	81	78
87.5°	70	72	79	85	89	90	89	84	77	69	67
90°	63	64	70	76	79	80	78	74	67	61	60
92.5°	59	60	66	71	74	75	74	69	63	57	56
95°	58	58	64	69	72	73	71	67	61	56	55
97.5°	56	57	61	66	69	70	69	65	59	54	53
100°	55	55	59	64	67	68	66	62	57	52	52
102.5°	53	53	56	61	64	65	63	60	54	50	50
105°	51	51	54	58	61	62	60	57	52	48	48
107.5°	49	49	51	55	58	59	57	54	49	46	47
110°	47	47	49	53	55	56	54	51	47	44	45



TEST NUMBER: P29163

CATALOG NUMBER: H12-LD4-20W-40-OPL-EDC1

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
112.5°	45	45	46	50	52	53	51	48	44	42	43
115°	43	43	43	46	49	49	48	45	41	40	41
117.5°	40	40	40	43	45	46	45	42	38	38	38
120°	38	38	37	40	42	43	41	39	35	36	36
122.5°	36	36	34	37	39	39	38	35	33	34	34
125°	34	34	32	34	35	36	35	32	30	32	32
127.5°	31	31	30	30	32	32	31	29	28	29	29
130°	29	29	27	27	28	29	28	25	26	27	27
132.5°	26	26	25	23	25	25	24	22	23	24	25
135°	24	24	22	20	21	22	20	19	21	22	22
137.5°	21	21	20	17	18	18	17	16	18	20	20
140°	18	18	17	15	14	14	13	14	16	17	17
142.5°	16	16	15	12	10	10	9	12	14	15	15
145°	13	13	12	10	7	6	7	9	11	12	12
147.5°	11	11	10	8	5	2	5	7	9	10	10
150°	8	8	7	5	2	0	2	5	7	7	7
152.5°	5	5	4	2	0	0	0	2	4	5	5
155°	2	2	1	0	0	0	0	0	1	2	2
157.5°	0	0	0	0	0	0	0	0	0	0	0
160°	0	0	0	0	0	0	0	0	0	0	0
162.5°	0	0	0	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0	0	0	0
167.5°	0	0	0	0	0	0	0	0	0	0	0
170°	0	0	0	0	0	0	0	0	0	0	0
172.5°	0	0	0	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0	0	0	0
177.5°	0	0	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0	0	0

(END OF REPORT)