

LEDlight 30 W Universal dimmable series L05031

Lumotech®

Lumotech technology

Lumotech LED drivers are designed to efficiently power and control LED solutions for general lighting applications. System reliability is enhanced by features that protect the connected LED module, e.g. hot wiring, reduced ripple current and thermal derating. In the coming years LEDs will continue to increase in efficiency, creating new challenges for OEMs. With Lumotech LED drivers, flexibility in luminaire design is assured thanks to adjustable current outputs.



Benefits

- Designed with system reliability in mind:
 - Low inrush current
 - Low output current ripple
 - Short and open circuit protection, overload and over voltage protection
 - Thermal protection (automatic current limiter)
 - Support for hot-swapping of LEDs >10W
 - Excellent EMC behavior
- Future-proof flexibility - industry leading voltage and current range enabling seamless support of LED generations and minimizing supply chain complexity
- When starting for the first time, the driver automatically detects whether a pulse switch, a potentiometer or a 1-10V signal is connected. The dimming function is stored in the driver. The driver starts automatically in the right position the next time. During the first 30 seconds boot, the dimming procedure will detect if the dimming method has changed.

Product features

- Wide output voltage range 6 - 42 Vdc
- Wide range of current settings 100 - 1400mA
- 1-10V dimming and pulse dimming
- Max inrush current 0.25 A
- Low output current ripple (<1 %) at 100 Hz
- Active overcurrent protection
- Up to 88 % efficiency across a wide range of loads
- Power factor 0.97
- SELV
- ENEC certified
- Engineered and Manufactured in Europe

5 year warranty

Lumotech takes pride in the quality of its products. We not only develop all products in house, they are also produced in our own manufacturing plants to ensure guaranteed reliability and performance. Lumotech drivers come with the assurance of a 5 year warranty. After all, with typical LED lifetimes of 50,000 hours, it is critical to have a power supply with equal reliability.



Certificates and standards

- ENEC05, CE
- EN55015 / EN61000-3-2 / EN61347-2-13 / EN61347-1 / EN61547 / EN62384 / SELV

Classifications



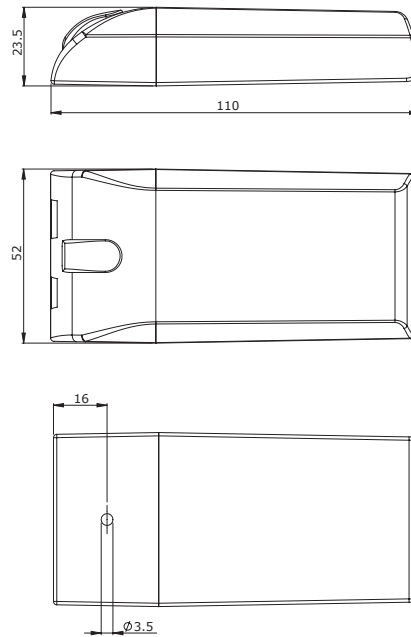
Specific technical data

Type	Efficiency at full load	Output current	Output voltage range	Open circuit output voltage	Max. output power	Dimming
L05031	85 %	100 - 1400mA	6 - 42 Vdc	48 Vdc	30 W	1 - 10 V, potentiometer 100K log b, pulse (SELV)

Technical data

Rated supply voltage	220-240 Vac
Input voltage	180-240 Vac
Mains frequency	50/60 Hz
Output current tolerance	5 %
100 Hz ripple current at full load	<1 %
Power factor at full load	0.98
Standby power	350 mW
Nominal line current at 240 Vac	160 mA
Dimming method	linear
Minimum dim level	pulse: 15 mA - Off 1-10V: 15 mA at 1V (<1 V = off)
Non volatile memory	Yes
Output voltage setting time	1 second
Output isolation	SELV
Surge protection (diff. / comm.)	2kV / 6kV
IP classification	IP 20
Circuit lifetime	50,000 hrs at Tc max.
Case dimensions	110 x 52 x 23.5 mm

Dimensions



Inrush current

Mains max. peak inrush at full load	0.25 A*	* Tested at 240 Vac, on phase 60° with TTI HA1600A analyzer.
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Maximum number of drivers on automatic circuit breakers

Automatic circuit breaker type	C10	C13	C16	C20	B10	B13	B16	B20
L05031	85	110	136	170	85	110	136	170

Thermal specifications

Ambient temperature range (Ta)	-20 to 45°C
Maximum case temperature (Tc)	<80°C
Storage temperature range	-20 to 50°C

Ordering data

Part	Part number	Packaging carton	Multibox carton	Weight per pc.
LEDlight UNIDIM LED driver - LEDlight 1-30W	L05031	20 pieces	240 pieces	105 g

Active overload protection

If the maximum output power is exceeded, the LED driver reduces the LED output to a current level within the specification of the driver. This prevents overload at all times.

Short-circuit protection

In case of a short circuit the LED driver switches to protection mode. After the removal of the short-circuit the LED driver will recover automatically.

Overtemperature protection

The LED driver is protected against thermal overload. If the temperature limit is exceeded, the output current is reduced.

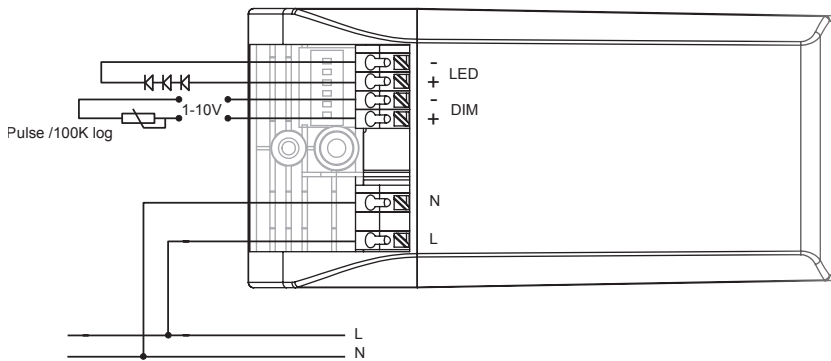
No-load operation

In no-load operation the output voltage will not exceed the specified open circuit output voltage.

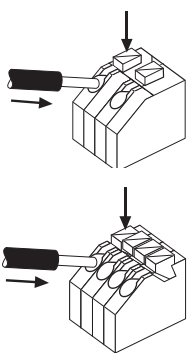
Active overcurrent protection

Active overcurrent protection to allow hotswapping of LEDs higher than 10 Watt.

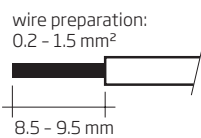
Wiring diagram



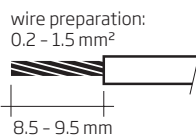
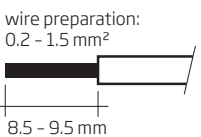
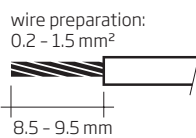
Wiring of device



Solid

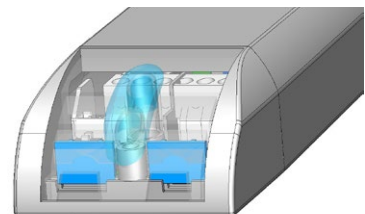


Stranded



Strain relief

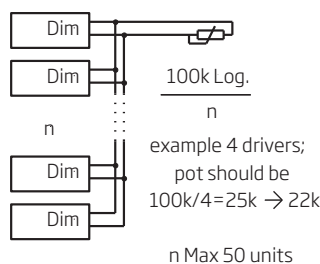
The strain relief inserts can be removed to accommodate wiring of larger diameters.



Dimming

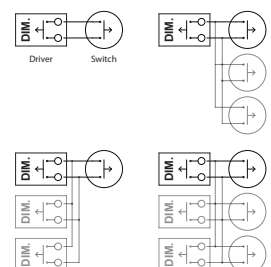
1 - 10 V dimming

In case of multiple drivers on one dimmer make sure that the wires are connected according to polarity. Each driver supplies the 1-10V dimming bus with 1mA max. (50mA sink capable dimmer can dim 50 drivers)



Pulse dimming

In case of multiple drivers on one dimmer make sure that the wires are connected according to polarity.



Dipswitch settings

The constant current and constant voltage settings can be adjusted by using the dipswitch on the driver. The table lists the supported currents and voltages.

The switch in the up position (ON) is defined as '1'.
The switch in the down position (Off), is defined as '0'.

The examples below illustrate two settings for the L05031.



1040mA



700mA

Ambient temperature, and cooling

The rated ambient temperature is defined for a driver mounted on a thermally conductive metal surface. A cooling surface of 10cm x 10cm x 2mm is enough for each driver. If the driver is not cooled, thermal protection might trigger at a lower temperature and the output power will be reduced.

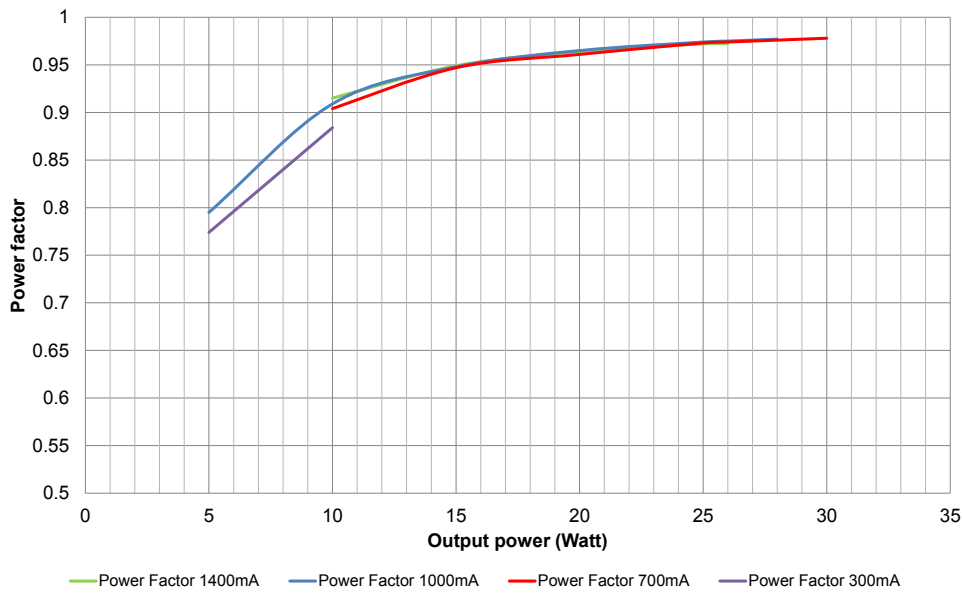
Without the metal surface it is recommended to limit the output power at 25W at a maximum ambient temperature. The dependency between power and ambient temperature in this case is illustrated in the table below.

Driver not cooled		
current setting	t ambient	maximum output power
700mA	39	30
700mA	40	29
700mA	42	28
800mA	39	28
800mA	40	28
800mA	42	28
1000mA	39	28
1000mA	40	25
1000mA	42	25
1200mA	39	28
1200mA	40	28
1200mA	42	25

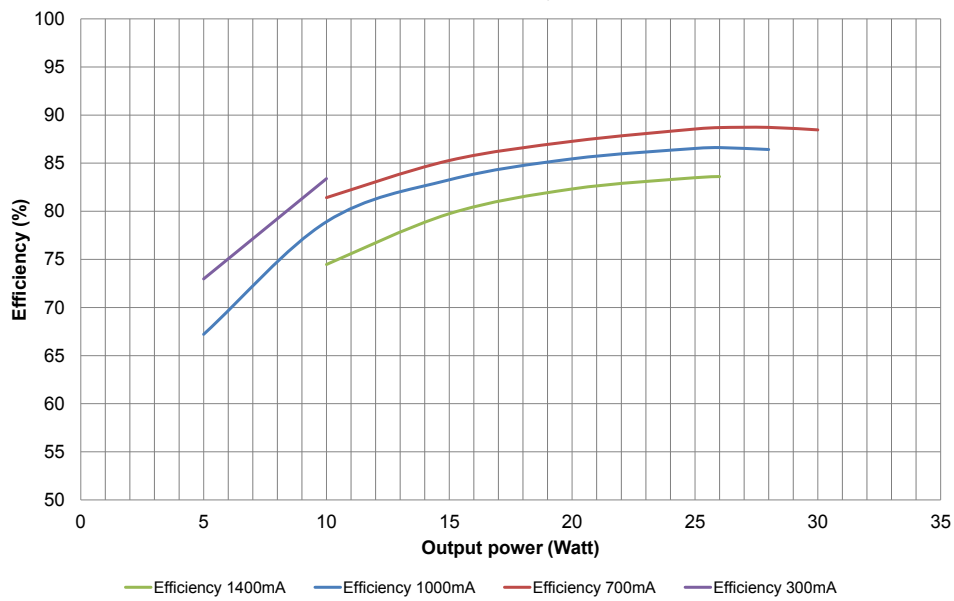
L05031 settings

Dip setting	Output current (mA) reserved	max output power	Switch no					
			1	2	3	4	5	6
0			0	0	0	0	0	0
1	100	4	1	0	0	0	0	0
2	120	5	0	1	0	0	0	0
3	140	6	1	1	0	0	0	0
4	160	7	0	0	1	0	0	0
5	180	8	1	0	1	0	0	0
6	200	9	0	1	1	0	0	0
7	220	9	1	1	1	0	0	0
8	240	10	0	0	0	1	0	0
9	260	11	1	0	0	1	0	0
10	280	12	0	1	0	1	0	0
11	300	13	1	1	0	1	0	0
12	320	14	0	0	1	1	0	0
13	340	15	1	0	1	1	0	0
14	360	15	0	1	1	1	0	0
15	380	16	1	1	1	1	0	0
16	400	17	0	0	0	0	1	0
17	420	18	1	0	0	0	1	0
18	440	19	0	1	0	0	1	0
19	460	20	1	1	0	0	1	0
20	480	21	0	0	1	0	1	0
21	500	22	1	0	1	0	1	0
22	520	22	0	1	1	0	1	0
23	540	23	1	1	1	0	1	0
24	560	24	0	0	0	1	1	0
25	580	25	1	0	0	1	1	0
26	600	26	0	1	0	1	1	0
27	620	27	1	1	0	1	1	0
28	640	28	0	0	1	1	1	0
29	660	28	1	0	1	1	1	0
30	680	29	0	1	1	1	1	0
31	700	30	1	1	1	1	1	0
32	720	30	0	0	0	0	0	1
33	740	30	1	0	0	0	0	1
34	760	30	0	1	0	0	0	1
35	780	30	1	1	0	0	0	1
36	800	30	0	0	1	0	0	1
37	820	28	1	0	1	0	0	1
38	840	28	0	1	1	0	0	1
39	860	28	1	1	1	0	0	1
40	880	28	0	0	0	1	0	1
41	900	28	1	0	0	1	0	1
42	920	28	0	1	0	1	0	1
43	940	28	1	1	0	1	0	1
44	960	28	0	0	1	1	0	1
45	980	28	1	0	1	1	0	1
46	1000	28	0	1	1	1	0	1
47	1020	28	1	1	1	1	0	1
48	1040	28	0	0	0	0	1	1
49	1060	26	1	0	0	0	1	1
50	1080	26	0	1	0	0	1	1
51	1100	26	1	1	0	0	1	1
52	1120	26	0	0	1	0	1	1
53	1140	26	1	0	1	0	1	1
54	1160	26	0	1	1	0	1	1
55	1180	26	1	1	1	0	1	1
56	1200	26	0	0	0	1	1	1
57	1220	26	1	0	0	1	1	1
58	1240	26	0	1	0	1	1	1
59	1260	26	1	1	0	1	1	1
60	1280	26	0	0	1	1	1	1
61	1300	26	1	0	1	1	1	1
62	1350	26	0	1	1	1	1	1
63	1400	26	1	1	1	1	1	1

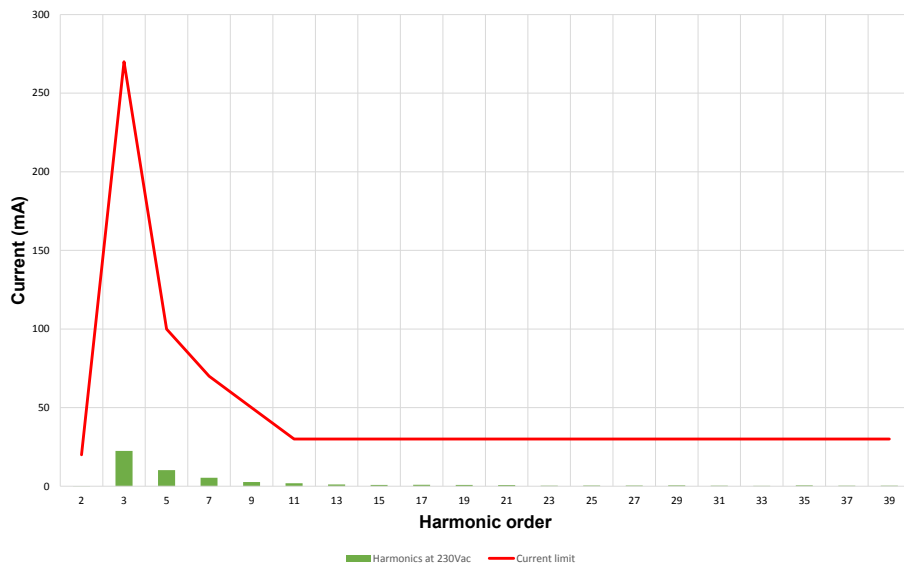
Power factor L05031



Efficiency L05031



Harmonics L05031 (limit according to IEC 61000-3-2 table 3)



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