

# CLES/CLED/CLET/CLEQ series

- **Models from 50 to 350W**
- **single to quad output**
- **low output noise**
- **IEEE 488 versions available**



## MAJOR FEATURES

- . Rectangular characteristics: operates with constant voltage or constant current with automatic switch depending on adjustments and load.
- . Floating outputs: possible connection of output + or output - to the case
  - Series mounting
  - Parallel mounting
  - Voltage & current digital display: resolution 2000 points, accuracy: 0.5% of reading + 2 digits

## PROTECTIONS

- . AC line by fuse rear panel accessible
- . Against overloads & short-circuits:
  - . with constant voltage mode, by adjusting the current limitation from 0 to I<sub>max</sub>
  - . with constant current mode, by adjusting the voltage limitation from 0 to V<sub>max</sub>

## Model table

Référence	Puissance (W)	Tension (V)	Courant (A)	Gamme	Dim. (mm)/ masse (kg)
CLES 18-3	54	0 - 18	0 - 3	MONO	128 x 145 x 285/5
CLES 18-5	90	0 - 18	0 - 5		
CLES 30-3	90	0 - 30	0 - 3		
CLES 18-10	180	0 - 18	0 - 10	MONO	255 x 145 335/11,5
CLES 30-6	180	0 - 30	0 - 6		
CLES 60-3	180	0 - 60	0 - 3		
CLES 18-20	360	0 - 18	0 - 20	MONO	225 x 145 x 420/18,5
CLES 35-10	350	0 - 35	0 - 10		
CLES 75-5	375	0 - 75	0 - 5		
CLES 110-3	330	0 - 110	0 - 3	MONO	225 x 145 x 420/13,5
CLED 30-3	195	0 - 30 0 - 30	0 - 3 0 - 3	DOUBLE	255 x 145 x 265 / 7
CLET 18-5	200	0 - 18 0 - 18 5	0 - 5 0 - 5 3	TRIPLE	225 x 145 x 335/11,5
CLET 30-2	135	0 - 30 0 - 30 5	0 - 2 0 - 2 3		
CLET 30-3	195	0 - 30 0 - 30 5	0 - 3 0 - 3 3		
CLET 30-3A	195	0 - 30 0 - 30 5	0 - 3 0 - 3 3	TRIPLE	255 x 145 x 265 / 7
CLEQ 30-3	200	0 - 30 0 - 30 2,2 - 5,2 8 - 15	0 - 3 0 - 3 1 1	QUADRUPLE	255 x 145 x 265 / 7
CLES 36-3.5 IEEE	130	0 - 36	0 - 3,5	IEEE 488	225 x 145 x 346/10
CLET 18-3 IEEE	140	0 - 18 0 - 18 0 - 6	0 - 3 0 - 3 0 - 5		
CLET 36-1.5 IEEE	130	0 - 36 0 - 36 0 - 6	0 - 1,5 0 - 1,5 0 - 3		

**Mono voltage range****CLES series**

- . These model ranges are equipped of an output voltage which is adjustable by potentiometers (low and high precision)
- . They are equipped of red and green LED to show the constant voltage or current operating

**Electrical specification**

<b>mono voltage models</b>	
<b>Constant voltage operation mode</b>	
<b>Output voltage</b>	
- range :	0 à Vmax (see table)
- Adjustment by optical potentiometer:accuracy :	0,02% Vmax
<b>Output voltage regulation</b>	
- input voltage $\pm 10\%$	0,01% + 3 mV
- output current from 0 to 10A	0,01% + 5 mV
-output current >10A	0,02% + 5 mV
<b>Response time (load min of 0.5A)</b>	
- variation of 50% output current	100 $\mu$ s
<b>Ripple (BP 20Mhz)</b>	1 mV rms
<b>Constant current operation mode</b>	
<b>Output current</b>	
- range :	0 à I max (see table)
- Adjustment by potentiometer:accuracy :	0,02% I max
<b>Output current regulation</b>	
- input voltage $\pm 10\%$	0,5% + 10 mA
- output voltage from 0 à 100%	0,5% + 10 mA
<b>Ripple</b>	
- ( < 300W )	3 mA rms
- ( > 300W )	5 mA rms
<b>General characteristics</b>	
<b>Input voltage</b>	100/120/220/240 Vrms $\pm 10\%$ (switch selectable)
- alternative single phase	50/60 Hz
<b>Isolation</b>	
- output/case < 300W	20 M $\Omega$ under 500 VDC
( > 300W )	100 M $\Omega$ under 500 VDC
<b>Operating temperature</b>	0 to 40°C

Except if otherwise specified, all features are given as typical values for an ambient temperature of +25°C, at nominal input voltage value & output current at full load.

## DOUBLE RANGE CLED SERIE

. These model ranges are equipped of 2 output voltages which are adjustable by potentiometers (low and high precision)  
 . They are equipped of red and green LED to show the constant voltage or current operating

### Electrical specification

Double voltage models	
Constant voltage operation mode	
<b>Output voltage</b>	
- range :	0 to Vmax (see table)
- Adjustment by optical potentiometer:accuracy :	0,02% Vmax
<b>Output voltage regulation</b>	
- Vin $\pm$ 10%	0,02% + 3 mV
- Is from 0 to 100% (for Imax < 10A)	0,01% + 5 mV
( > 10A)	0,02% + 5 mV
- serie mode	< 350mV
- Tracking error	< 0,5% +12 mV of output (CH1)
<b>Response time (load min of 0.5A)</b>	
- variation of 50% output current	150 $\mu$ s
<b>Ripple (BP 20Mhz)</b>	2 mV rms
Constant current operation mode	
<b>Output current</b>	
- range :	0 à I max (see table)
- Adjustment by potentiometer:accuracy :	0,02% Imax
<b>Output current regulation</b>	
- input voltage $\pm$ 10%	0,5% + 10 mA
- output voltage from 0 à 100%	0,5% + 10 mA
<b>Ripple</b>	
- ( BP 1Mhz)	3 mA rms
General characteristics	
<b>Input voltage</b>	100/120/220/240 Vrms $\pm$ 10% (switch selectable)
- alternative single phase	50/60 Hz
<b>Isolation</b>	
- output/case	20 M $\Omega$ under 500 VDC
- input/case	30 M $\Omega$ under 500 VDC
<b>Operating temperature</b>	0 à 40°C

Except if otherwise specified, all features are given as typical values for an ambient temperature of +25°C, at nominal input voltage value & output current at full load.

**Three output voltage range****Série CLET**

- These model ranges are equipped of 2 output voltages which are adjustable by potentiometers (low and high precision) and a fixed output voltage
- They are equipped of red and green LED to show the constant voltage or current operating

**Electrical specification**

<b>Three output voltage models</b>	
<b>Constant voltage operation mode</b>	
<b>Output voltage</b>	
- range :	0 to Vmax (see table)
- Adjustment by optical potentiometer:accuracy :	0,02% Vmax
<b>Output voltage regulation</b>	
- Vin $\pm$ 10%	0,02% + 3 mV
- Is from 0 to 100% (for I <sub>max</sub> < 10A)	0,01% + 5 mV
( > 10A)	0,02% + 5 mV
- serie mode	< 350mV
- Tracking error	< 0,5% +12 mV of (CH1)
<b>5V regulation</b>	
- Vin $\pm$ 10%	< 7mV
- I out from 0 to 100%	< 20mV
<b>Response time (load min of 0.5A)</b>	
- variation of 50% output current	150 $\mu$ s
<b>Ripple (BP 1Mhz) CH1,CH2</b>	2 Mvrms
- CH 5V (BP 1Mhz)	< 4mV rms
<b>Constant current operation mode</b>	
<b>Output current</b>	
- range :	0 à I max(see table)
- Adjustment by potentiometer:accuracy :	0,02% I <sub>max</sub>
<b>Output current regulation</b>	
- input voltage $\pm$ 10%	0,5% + 10 mA
- output voltage from 0 à 100%	0,5% + 10 mA
<b>Ripple</b>	
- ( BP 1Mhz)	3 mA eff
<b>General characteristics</b>	
<b>Input voltage</b>	100/120/220/240 Vrms $\pm$ 10% (switch selectable)
- alternative single phase	50/60 Hz
<b>Isolation</b>	
- output/case	20 M $\Omega$ under 500 VDC
- input/case	30 M $\Omega$ under 500 VDC
<b>Operating temperature</b>	0 to 40°C

Except if otherwise specified, all features are given as typical values for an ambient temperature of +25°C, at nominal input voltage value & output current at full load.

