



Optical Finesse μ LC400-30

Flexible, Full-featured Quad LC Controller



The μ LC400-30 quad liquid-crystal controller is suitable for driving continuously-variable large-area LC devices such as variable retarders, polarization rotators & switches, shutters, variable attenuators, tunable color filters, and polarization-state generators/analyzers.

The μ LC400-30 incorporates four independent LC channels, each with 30V_{RMS} of range and fully short-circuit protected. The LC channels are capable of operating either AC (carrier) or DC (carrier-less), and can drive large-area cells up to 650 nF capacitance. Standard LC connectorizations of BNC, mini-DIN6, or SMA are available.

The controller is operated by our **LCDriver** application via a full-speed USB 2.0 compliant interface. **LCDriver** permits dynamic editing of AC or DC programs up to 32 lines in length. A separate tab of the **LCDriver** application permits simple amplitude control of the LC channels in AC mode. A device-driver DLL is provided to permit user programming of the μ LC400-30.

Three trigger modes (internal, line, program) determine how program lines are executed. The external trigger is software-configurable between Trigger Input (slave) and Output (master) modes.

Up to nine programs may be pre-stored on the μ LC400-30 for standalone execution upon disconnect of the USB cable. A front-panel pushbutton switch selects the executing standalone program.

The controller is 100% RoHS compliant and is powered by a separate 12V international power supply.



Available connectorizations:

- BNC
- mini-DIN6
- SMA

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LC CHANNELS	
Number of LC channels	• Four, independently programmable
Maximum voltage stroke	• 31.60 V _{RMS}
LC voltage output	• Either AC (carrier + envelope) or DC (carrier-suppressed) LC drive waveforms, software selectable
AC waveforms	• Square-wave carrier, 50.00% duty cycle • Frequencies of 1.0, 2.0, 2.5, 4.0 or 5.0 kHz, software-selectable
DC waveforms	• Bipolar, 0.05 ms interval resolution
Amplitude resolution	• 16-bit; 1 mV voltage resolution
Amplitude accuracy	• Better than $\pm 0.3\%$ typical, $\pm 0.5\%$ maximum, measured at full range
Residual DC	• Less than 2 mV at any output
Drive capability	• Each channel can drive cells up to 650 nF capacitance
Short circuit	• Full-recovery short-circuit protection on all LC channels • Front-panel "Fault" LED will illuminate when channel is shorted
LC programs	• Up to nine pre-stored 32-line LC programs for standalone operation • Front-panel pushbutton switch selects executing standalone program

INTERFACE	
Host computer interfaces	• Full-speed USB 2.0 compliant • 9600 bps RS-232 upon special arrangement
Software	• <i>LCDriver</i> application software with host USB drivers for Windows 7, Vista, Windows XP, and Windows 2000 (executable only; 64-bit Windows XP not supported) • Permits dynamic creation and editing of LC programs • Separate tab for static LC channel amplitude control in AC mode
Device drivers	• DLL toolkit for programming in <i>LabVIEW</i> , <i>Visual Basic</i> or <i>Visual C++</i>
External Trigger	• Software-selectable between Trigger Input (slave) and Output (master) configurations • TTL-compatible fan-in/fan-out

PHYSICAL	
Dimensions	• 6.1 in W x 7.1 in. L x 2.1 in H
Weight	• 2.5 lbs (controller + power supply)
Chassis material	• Black ABS plastic • Machined aluminum front & back panels, black-anodized and laser etched
Front panel	• Power, Fault and Status LEDs • Ten-position pushbutton switch for program selection in standalone mode
Back panel	• 50-ohm BNC female bulkhead for Trigger Input/Output • Series B USB receptacle for USB to host computer • LC channel output connectorizations: specify BNC, mini-DIN6, or SMA connectors • 2.1 mm power jack receptacle • 12V power ON/OFF switch
RoHS compliance	• 100% compliant (no exemptions used)
CE compliance	• Certification to FCC Class A emissions level upon special arrangement
Operating temperature	• 5 to 45° C
Power supply	• Separate, supplied with controller • International +12V, 18W, 100-240VAC 50-60Hz input, UL/CE listed • 2.1 x 5.5 mm center-positive plug
Warranty	• One year

In keeping with our commitment to continuous product improvement, these specifications are subject to change without notice.



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