THORLABS 43 Sparta Avenue Newton, NJ 07860 | Sales: (973) 300-3000 | www.thorlabs.com

DC20 - September 5, 2025

Item # DC20 was discontinued on September 5, 2025. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

SOLIS® LED DRIVER

- **Plug-and-Play Driver for Thorlabs' Solis® LEDs**
- **Supports Modulation Up to 1 kHz via External TTL Signal**
- **Automatically Sets Current Limit to Protect the LED**

DC20
Top View

The DC20 is designed to provide easy plug-and-play operation for Thorlabs' Solis LEDs.

DC20

Solis High-Power LED for Microscopy

OVERVIEW

Features

- Designed for Thorlabs' Solis® LEDs for Microscopy
- Easily Control LED Intensity Using the Dial
- Protects LED from Overdriving by Automatically Setting the Current Limit
- Provides Drive Current Up to 10 A
- Supports LED Forward Voltage Up to 14 V
- Accepts External TTL Modulation Signal via BNC Connector

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DC20 Solis® LED Driver

DC20 Key Specifications[a]	
LED Current (Max)[b]	1 to 10 A
LED Forward Voltage (Max)[b]	5.0 to 14.0 V
LED Current Limit Accuracy	±(1% + 25 mA)
TTL Modulation Frequency	DC to 1 kHz
Modulation Waveform	Square Wave / PWM

a. See the *Specs* tab for complete specifications.
b. The DC20 is designed to automatically select the appropriate current/voltage combination for any connected Solis LED and is compatible with all Solis LEDs. The maximum LED current and forward voltage are dependent on each other: the DC20 cannot drive an LED with a 14 V forward voltage at 10 A.

Thorlabs' DC20 Driver is designed to provide a simple way to control any of Thorlabs' Solis LEDs. Easy to set up and use, this driver is an ideal solution for users of our Solis LEDs who don't require the more advanced functions provided by the DC2200 Touchscreen LED Driver. See the *Solis LED Drivers* tab for a comparison between the DC20 and the DC2200 drivers.

The current provided to the LED is controlled by turning the knob on the top of the driver. The position on the top panel marked LIMIT will correspond to the maximum LED current for the connected Solis LED, as the driver automatically detects and sets the current limit to the value stored in each Solis LED's internal memory to protect it from being overdriven. Pushing on the knob will either switch the LED on at the percentage of the maximum current indicated by the control knob position or turn it off. The LED can also be modulated using an external TTL signal connected to a BNC input on the back of the driver's housing. Please note that for safety concerns the driver has to be manually switched on before the TTL modulation can be used. See the *Specs* tab for the TTL signal requirements.

A tri-color LED on the side of the unit indicates the current LED status, including whether the LED is on or off (useful with IR LEDs), whether the LED is operating normally, or if an error has occurred.

Please note that the DC20 driver is designed specifically to work with the internal electronics in Thorlabs' Solis LEDs and should not be used to drive any other type of LED.

Compatible Thorlabs LEDs	
Photo (Click for Link)	
Description	High-Power Solis LEDs

Thorlabs also offers other LEDs drivers that are compatible with our mounted, collimated, fiber-coupled, and PCB-mounted LEDs. See the table below for available LED driver options.

LED Controller Selection Guide						
Type	**Max Number of LEDs**	**Max Current**	**Modulation Mode**	**USB**	**Remote Operation**	**Compatible LEDs**
upLED™ LED Driver	1	1.2 A	-	Yes	Yes	Mounted, Collimated, Fiber Coupled, Diffuse Backlight, and PCB Mounted[a]
Compact T-Cube™ Driver	1	1.2 A	0 - 5 kHz	No	No	
4-Channel Driver	4	1 A	0 - 100 kHz	Yes	Yes	
4.0 A LED Driver	1	4.0 A	0 - 5 kHz	Yes	Yes	
Solis® LED Driver	1	10 A	0 - 1 kHz	No	No	High Power
High-Power Touchscreen Driver	1	10.0 A	0 - 250 kHz	Yes	Yes	High Power, Mounted, Collimated, Fiber Coupled, Diffuse Backlight, and PCB Mounted[a]

a. Requires the CAB-LEDD1 Cable.

SPECS

DC20 Specifications	
Constant Current Mode (CW)	
LED Current (Max)[a]	1 to 10 A
LED Forward Voltage (Max)[a]	5.0 to 14.0 V
LED Current Limit Accuracy	±(1% + 25 mA)
Noise and Ripple (1 Hz to 10 MHz, RMS)	<400 µA (Typical)
TTL Modulation Mode[b]	
Input Impedance	10 kΩ
Modulation Frequency Range	DC to 1 kHz
Duty Cycle Range	0.2% to 99.8% (10 Hz) 2.0% to 98.0% (100 Hz) 20% to 80% (1 kHz)
Modulation Waveform	Square Wave / PWM (Pulse Width Modulation)
TTL Low Voltage Level	0.0 V to 0.8 V
TTL High Voltage Level	2.0 V to 5.0 V
General	
Power Supply	15 V DC
Power Consumption	65 VA (Max)
Operating Temperature Range[c]	0 to 40 °C
Storage Temperature Range	-40 to 70 °C
Dimensions	85.4 mm x 59.6 mm x 100.0 mm (3.36" x 2.35" x 3.94")
Weight	215 g (without Power Supply) 490 g (with Power Supply)

a. The DC20 is designed to automatically select the appropriate current/voltage combination for any connected Solis® LED and is compatible with all Solis LEDs. The maximum LED current and forward voltage are dependent on each other: the DC20 cannot drive an LED with a 14 V forward voltage at 10 A.

b. In TTL Modulation Mode, there may be a small delay in output response depending on the forward voltage and capacitance of the connected Solis LED.

c. Non-Condensing

All technical data are valid at 23 ± 5 °C and 45 ± 15% relative humidity (non-condensing).

PIN DIAGRAMS

Callout	Description
1	Control Knob: Turn for LED Current Adjustment,

Click to Enlarge
Connectors and Control Knob
on the DC20

Click to Enlarge
Status Indicator LED

Click to Enlarge
DC20 Top View

	Push to Turn LED On and Off
2	BNC Jack for TTL Modulation Input: Low Voltage Level: 0.0 V to 0.8 V, High Voltage Level: 2.0 V to 5.0 V
3	Solis® LED Connector
4	Input for Power Supply
5	Status LED Orange: DC20 Ready for Operation, LED Off Green: Solis LED On Red or Blinking: Warning Indicator[a]

a. See the Troubleshooting section of the DC20 Manual for more information.

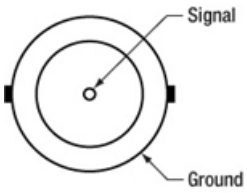
DC20 Connector Pin Diagrams

Solis® LED Connector
12 Pin Neutrik MiniCON Female Connector

The DC20 Driver is only intended for use with Thorlabs' Solis LEDs, so this pin diagram is provided for reference only.

Pin	Connection	Pin	Connection
1	LED Cathode	7	LED Anode
2	LED Cathode	8	LED Cathode
3	Not Used	9	LED Cathode
4	LED Anode	10	Not Used
5	LED Anode	11	EEPROM (Data) I/O
6	LED Anode	12	EEPROM (Data) Ground

External Trigger
BNC Jack for TTL Signal



Low Voltage: 0.0 to 0.8 V
High Voltage: 2.0 to 5.0 V

**SHIPPING LIST **

The following items are included in the DC20 package:

- DC20 LED Current Controller
- Power Supply
- Location-Specific Power Cord

Click to Enlarge

SOLIS LED DRIVERS

Thorlabs offers two options for driving our Solis® LEDs. The DC20 is a basic option that allows users to control the intensity of their LED using a control knob on the top or via an external TTL signal for modulation. For more advanced applications, our DC2200 drivers provides a touchscreen interface that allows users to control the LED current, select internal or external modulation modes, and more. The table below provides a comparison of key controller features.

Solis® LED Driver Selection Guide		
Item #	**DC20**	**DC2200**
Photo (Click to Enlarge)		
LED Current / Forward Voltage (Max)	1 to 10 A / 5.0 to 14.0 V[a]	1.0 A / 50.0 V[b] 2.0 A / 35.0 V[b] 4.0 A / 15.0 V[b] 5.0 A / 10.0 V[b] 10.0 A / 5.0 V[b]
Noise and Ripple (1 Hz to 10 MHz, RMS, Typical)	<400 µA	<100 µA from 0.0 to 4.0 A <200 µA from 4.0 to 10.0 A
Internal Modulation Modes	-	0.1 Hz to 20 kHz (PWM[c] Mode) 1 µs to 10 s On or Off Time (Pulse Mode) 20 Hz to 100 kHz (Internal Modulation Mode with Sine, Square, Triangle Waveforms)
External Modulation (Arbitrary Waveform)	-	DC - 250 kHz [Small Signal Bandwidth (Sine)][d]
TTL Modulation (External)	DC to 1 kHz (Square Wave, PWM[c])	DC to ≥18 kHz[e]
LED Control Interface	Knob to Control LED Current, BNC Port for TTL Modulation	Easy-to-Navigate Touchscreen Interface, Brightness and Constant Current Operating Modes, Internal and External Modulation Modes, SMA Port for External Modulation Accepts TTL Signal or Waveform from a Function Generator, USB Interface for Remote Control
Current Limit	Automatically Read and Set from the Solis LED's Internal Memory to Protect the LED from Overdriving	
External Software Interface	No	DC2200 GUI
Other Compatible LEDs	-	Mounted Collimated Fiber Coupled MCPCB Mounted[f]

a. The maximum LED current and forward voltage are dependent on each other: the DC20 cannot drive an LED with a 14 V forward voltage at 10 A. The DC20 is compatible with all Solis LEDs and will automatically select the appropriate current/voltage combination for the connected Solis LED.
b. For Solis LEDs connected using Terminal 1. The DC2200 can also be used to drive Thorlabs' mounted, collimated and fiber-coupled LEDs, which use a separate terminal and are subject to different current and voltage limitations. See the complete web presentation for details.
c. PWM = Pulse Width Modulation
d. Small Signal Bandwidth: Modulation not exceeding 20% of full scale current. The driver accepts other waveforms, but the maximum frequency will be reduced.
e. Given for an output current at "High" TTL level not exceeding 10% of the selected current range limit.
f. Requires the CAB-LEDD1 cable.

Plug-and-Play Solis® LED Driver

- LED Driver for Thorlabs' Solis® LEDs for Microscpy
- Easily Turn On/Off the LED and Control Current Using the Dial
- Two Operation Modes: CW or TTL Modulation
- Automatically Sets Current Limit by Reading the EEPROM on Solis LEDs

The DC20 LED Driver is a plug-and-play LED driver capable of driving Thorlabs' Solis LEDs for Microscopy. This driver's turn-push knobon the top of the device turns the connected LED on/off, as well as controls the drive current from 0 A up to the limit specified by the LED's internal EEPROM data.

An LED can be driven in two different operating modes with the DC20 driver: Continuous Wave (CW) or Trigger (TTL) Modulation. Continuous Wave (CW) mode drives the LED with a constant set current, and this is the default mode when an LED is connected to the driver. The TTL mode can be used to turn the connected LED on and off using an external-active high voltage signal via the BNC input on the back panel. The TTL mode can be driven at frequencies up to 1 kHz. In TTL mode the brightness of the LED can be adjusted by turning the turn-push knob.

A 15.0 VDC power supply with a region specific power cable is included with each DC20 LED driver. If the power supply is damaged or misplaced, it can be replaced with Thorlabs' DSH15 Power Supply, offered below. For a full list of items included with this driver, see the *Shipping List* tab. Please note that the DC20 driver is designed to work with Thorlabs' Solis LEDs and should not be used to drive any other type of LED.

Part Number	Description	Price	Availability
DC20	High-Power Driver for Solis® LEDs, 10 A Max, 14.0 V Max	$616.84	In Stock Overseas

Replacement 15 VDC Regulated Power Supply, 4.65 A

- Compatible with Thorlabs' DC20 and DC40 LED Drivers
- 15 VDC Regulated Power Supply
- 4.65 A Max Current and 69.7 W Output Power
- Female TA3FLX 3-Pin Connector

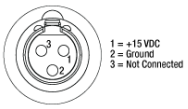


Figure 772A Female TA3FLX Mini-XLR Connector

The DSH15 power supply is a replacement power supply for Thorlabs' DC20 or DC40 LED Drivers, in case the power supply that ships with the device is damaged or misplaced. It is a 15 VDC regulated power with a 1.21 m long cable and a TA3FLX (Mini-XLR), 3-pin female connector. It accepts input voltages from 100 VAC to 240 VAC and ships with a region-specific AC cable.

Part Number	Description	Price	Availability
DSH15	15 VDC, 4.65 A Regulated Power Supply with TA3FLX Mini-XLR Connector, 100 - 240 VAC	$128.40	In Stock Overseas