Lighting Control Engine 4 (Multi-Range PSU / turbo)

Information for Use

Read the Information for Use and the Safety Instructions carefully. Subject to modification without prior notice.
Typographical and other errors do not justify any claim for damages. Modification of the product is prohibited.
This manual is designed for electricians, system administrators, and product users.
All product names and trademarks mentioned in this manual are trademarks of their respective owners.
Except for internal use, relinquishment of the instructions to a third party, duplication in any type or form - also extracts - as well as exploitation and / or communication of the contents is not permitted.

Downloads and more information at:
www.ecue.com

IC: CL25100005035, CL25100005735, CL25100005135

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Traxon Technologies Europe GmbH
Im Dörener Fold 8
33100 Paderborn, Germany

Traxon Technologies Europe GmbH
Sales Operations
Im Dörener Fold 8
33100 Paderborn, Germany
+49 5251 54648-0
support@ecue.com

Table of Contents

1 Safety instructions

Please read the safety instructions, provided in a separate manual, carefully. Make sure that the environmental, mounting, and installation prerequisites are met. This manual should be kept at a safe place and in reach of the device.

1.1 Symbols

The exclamation mark warns about possible damage of the device itself, to connected devices, and to the user.

The information symbol gives general hints and informs about handling and procedures for use of the device.

1.2 General safety instructions

- To prevent electric shock hazard or damage to the equipment, disconnect the power cord to remove power from the server. Portions of the power supply and some internal circuit remain active until power is removed.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets, and circuitry.
- Device components inside the system can reach high temperatures. Do not open the system while in operation. Repairs may only be carried out by authorized, specially trained personnel. When in doubt, contact Traxon e:cue service.
- To prevent the device from overheating, only operate it in well-ventilated environment. Do not install next to heat emitting sources or in a place subject to direct sunlight. Let the device cool down after operation before mounting or removing the device to avoid burnings.
- Avoid dust and humidity. Do not place the device in any area where it may become wet.
- Do not route network, DMX or any other communication line together with power lines. Data traffic or functions can be disturbed.
- This is a ITE device of class A. If used in domestic environments, this device may cause radio interferences. In this case the operator can be asked to undertake corrective measures.
- Do not step on the device.

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- Always carry the device by using both handles. Do not carry when the red front panel is unhitched.
- The red front panel of the device must be mounted in operation (fire enclosure). Remove the red front panel only when device is disconnected from mains.
- Accessibility for children is prohibited while the red front panel is removed. Place no foreign objects inside the device when the red front panel is removed.
- Repairs may only be carried out by authorized, specially trained personnel. When in doubt, contact Traxon e:cue service.

- Installation and maintenance of this product must be performed by qualified individuals who are knowledgeable about the procedures, precautions, and hazards associated with the product.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- If safety instructions are missing, please contact the Traxon e:cue support service to receive a new copy.
- Information for Use for the software applications SYMPHOLIGHT and Lighting Application Suite are available in electronical form here: inside the applications, via Desktop shortcut, and over www.ecue.com.

content

2 General device description

e:cue engines are a perfect platform for building dynamic, effective, and reliable lighting applications. These engines are the functional backbone of lighting installations controlling fixtures, interacting with user terminals, and executing shows. e:cue engines are built for steadiness, long-term use, and flexibility. They are feature-rich and benefit from many years pioneering work in the field of lighting control.

2.1 Lighting Control Engine 4 (Multi-Range PSU / turbo)

Designed to control large and complex projects, e:cue's Lighting Control Engine 4, Lighting Control Engine 4 (Multi-Range PSU) or Lighting Control Engine 4 turbo, in the following combined as LCE4 (Mutli-Range PSU / turbo), is a high-performance server with pre-installed SYMPHOLIGHT and Lighting Application Suite (LAS) software. Functioning as a central control unit, this versatile and reliable server coordinates all devices and luminaires within one project. The LCE4 (Mutli-Range PSU / turbo) supports a wide range of Ethernet-based protocols. The LCE4 (Mutli-Range PSU / turbo) is the ideal solution for the most ambitious projects. Shows and lighting scenes can be controlled via the internal web server with either a mobile device or a web browser. The LCE4 (Mutli-Range PSU / turbo) can be

mounted into a 19" rack.

2.2 Delivery content

Delivery content of the e:cue Lighting Control Engine 4 (Multi-Range PSU / turbo) / Lighting Control Engine (Multi-Range PSU) -
Product number CL25100005035 / CL25100005735 / CL25100005135:

- Lighting Control Engine 4 / Lighting Control Engine 4 (Multi-Range PSU) / Lighting Control Engine 4 turbo
  including Microsoft® Windows 11™ LTSC Enterprise and software licenses for e:cue's SYMPHOLIGHT and Lighting Application Suite
- Safety instructions
- Welcome card
- Rack mounting rails, including screws
- 2 x IEC-C13 power cord (EU and UK plug)
- Key for cover lock

2.3 Optional accessories

Recommended MIDI adapters (LAS support only):

- ESI Midimate eX
- M-Audio MIDISport 2X2 AE USB
- M-Audio USB Uno

content

3 Product specifications

3.1 Technical Data

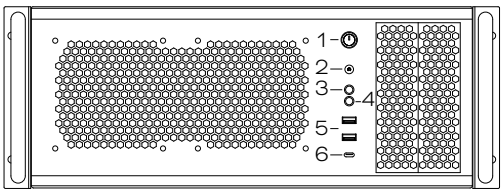
Product	Product number
LCE4	CL25100005035
LCE4 (Multi-Range PSU)	CL25100005735
LCE4 turbo	CL25100005135
Dimensions (W x H x D)	430 x 176 x 468 mm/ 16.93 x 6.93 x 18.43 in (excl. mounting brackets)
Weight	
LCE4 / (Multi-Range PSU)	14.2 kg
LCE4 turbo	14.8 kg
Power supply input	
LCE4 (turbo)	200 ... 240 V AC, 50/60 Hz
LCE4 (Multi-Range PSU)	100 ... 240 V AC, 50/60 Hz
Power consumption	115 W typically
Operating temperature	0 ... 40 °C / 32 ... 104 °F
Storage temperature	-10 ... 70 °C / 14 ... 158 °F
Operating / storage humidity	0 ... 80% RH, non-condensing
Protection class	IP20
Housing	Steel, front panel powder coated
Mounting	in 19-inch rack with rails
Certifications	CE, FCC

Interface specifications

USB	1 x USB 3.0 Type-C (front, behind cover) 2 x USB 3.0 (front, behind cover) 1 x USB 3.2 Gen2 Type-C (rear) 1 x USB 3.2 Gen 2 (rear) 4 x USB 3.2 Gen 1 (rear) 2 x USB 2.0 (rear)
Ethernet-Ports	2 x e:net 10/100/1000/2500 Mbps, RJ45 (rear)
Serial interfaces	1 x RS-232 (rear)
Graphics	2 x HDMI (rear) 4 x DisplayPort (rear)
Video Input (LCE4 turbo version only)	1 x HDMI Input Capture, 1 x DB9 Input Capture, 1920 x 1080 @ ~80 fps, max. 2048 x 2160 pxl or max. 144 fps (rear)
Audio	1 x audio (front, behind cover) 2 x microphone (1 x front, behind cover, 1 x rear) 1 x audio/line output (rear) 1 x audio/line input (rear)
Data storage	2 x M.2 SSD HDD (RAID 1 config)

3.2 Connectors and Interfaces

Front panel



1	Power switch and HDD activity indicator
2	Reset button
3	1 x audio
4	1 x microphone
5	2 x USB 3.0 interfaces for USB memory or media drives
6	1 x USB 3.0 Type-C interface

The USB interfaces can be used to connect media drives like CD/DVD drivers or USB flash drives for updates or data exchange. The power switch powers the system up or forces a shotdown upon a long press. A power down can be enforced by pressing and holding the power switch for at least 5 seconds. It also serves as activity indicator for the hard disk drives inside the LCE4 (Mutli-Range PSU / turbo).

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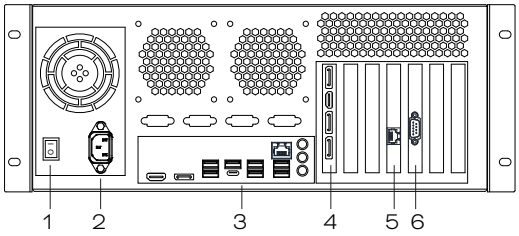
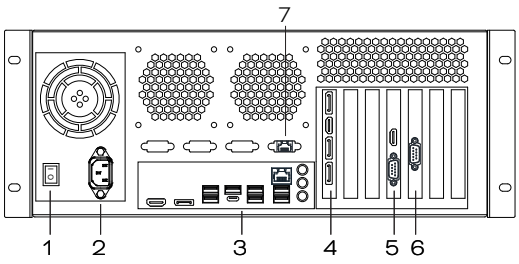
Back panel LCE4



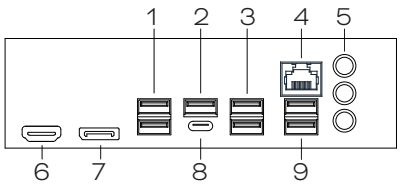
Back panel LCE4 turbo



1	Main AC switch
2	Main AC supply socket, IEC
3	“Mainboard interfaces” (page 07)
4	1 x HDMI (second from top) 3 x DisplayPort (bottom)
5	LCE4: 1 x Ethernet interface 10/100/1000/2500 MBits/s, RJ45 LCE4 turbo: 1 x HDMI Input Capture (top), 1 x DB9 Input Capture (bottom)
6	1 x Serial interface, RS-232
7	LCE4 turbo: 1 x Ethernet interface 10/100/1000/2500 MBits/s, RJ45

⚠ The BIOS and the boot screen are only accessible over the mainboard interfaces.

Mainboard interfaces



1	2 x USB 2.0

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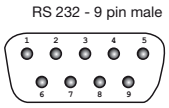
2	1 x USB 3.2 Gen2
3	2 x USB 3.2 Gen1
4	1 x Ethernet 10/100/1000/2500 MBits/s, RJ45
5	3 x Audio (Line In, Line Out, Microphone In)
6	1 x HDMI
7	1 x DisplayPort
8	1 x USB 3.2 Gen2 Type-C
9	2 x USB 3.2 Gen1

Serial interface, RS-232



1	DCD
2	RxD (Receive data)
3	TxD (Transmit data)
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

content

4 General remarks

4.1 Transport

Only transport the device in its original packaging. This protects the device from damage.

4.2 Unpacking

Only unpack the e:cue LCE4 (Mutli-Range PSU / turbo) at its installation location. To protect the device against condensation water, unpack it and wait until all moisture remaining in the device has evaporated. Condensation can occur when the device is moved from a cold to a warm location. Keep the packaging for use in case of further transport. Inspect all parts for completeness regarding chapter „2.2 Delivery content“ on page 05. If there is apparent damage to the device or parts are missing from the delivery scope, please contact the Traxon e:cue Support service.

4.3 Warranty regulations

Depending on the product, warranty regulations are of different duration. The warranty time is usually noted in the quote and in the order confirmation. See www.traxon-ecue.com/terms-and-conditions for details. Legal warranty regulations apply in any case.

4.4 Disposal

Batteries and technical appliances must not be disposed of with domestic waste, but should be handed in at the appropriate collection and disposal points.

The proper disposal of packing materials and of the device is the responsibility of the respective user and for his account; in all other matters, the retrieval obligation for packing materials and the device is subject to the statutory regulations.

4.5 Support

In case of technical problems or questions regarding installation and repair please contact:

Traxon Technologies Europe GmbH
Customer Service
Im Dörener Fold 8
33100 Paderborn, Germany
+49 (5251) 54648-0
support@ecue.com

content

5 Installation

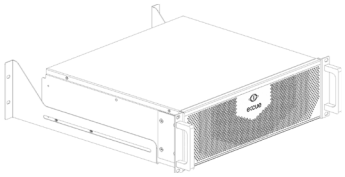
The installation of the LCE4 (Mutli-Range PSU / turbo) consists of mounting the device, connections to the peripheral devices and to power supply.

Supply the device with power after all cabling is completed.

⚠ Connect cables and data only when the device is powered down.

5.1 Mounting

You can mount the Lighting Control Engine 4 (Multi-Range PSU / turbo) in all standard 19-inch rack systems. Use the provided rack mounting rails and screws to fasten the device in the rack:



Make sure that the server rack is sufficiently ventilated and proper cage nuts and rack screws are used.
Connect the peripheral devices first. Ensure proper strain relief for the connected cables. All cables, except Ethernet, should not exceed a length of 3 meters.

⚠ Use shielded network cables with shielding connected to system ground.

5.2 Power supply

Use the provided power cord to connect the supply voltage.

To turn on the device, switch the Main AC switch on.

⚠ When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected.

6 Configuration

The LCE4 (Mutli-Range PSU / turbo) runs on Microsoft® Windows 11™ as operating system. It enables you to run lighting control applications as e:cue's SYMPHOLIGHT and e:cue's Lighting Application Suite (LAS) on the LCE4 (Mutli-Range PSU / turbo). When first powering the LCE4 (Mutli-Range PSU / turbo), a setup of the server is required. Set the network properties for the LCE4 (Mutli-Range PSU / turbo) and the lighting control applications afterwards.

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6.1 LCE4 (Mutli-Range PSU / turbo) Operation

Connect a display and input devices (keyboard, mouse) to the Lighting Control Engine 4 (Multi-Range PSU / turbo). Display and input devices are always necessary when accessing any application or settings on the LCE4 (Mutli-Range PSU / turbo). Connect the power supply and switch on the LCE4 (Mutli-Range PSU / turbo) with the power button. The LED power indicator lights up in white while the LCE4 (Mutli-Range PSU / turbo) accesses the hard drive. You can hot swap devices to all interfaces, and the Video Capture Card of the LCE4 (Mutli-Range PSU / turbo).

Do not switch off the server with the power button or by removing the power supply, but use the Windows shutdown function to prevent loss of data.

6.2 Setup

Boot the LCE4 (Mutli-Range PSU / turbo) by pressing the power button. Windows starts its usual setup. Follow the instructions. You can change the keyboard layout to your needs and also set your time zone which matters for the lighting show execution. Windows is set to automatic login. For other cases, these are the login credentials:
The default user name is: **ecue**
The default password is: **ecue!**
The LCE4 (Mutli-Range PSU / turbo) has a second, backup user account prepared for safety or support reasons. Keep the account and do not change its settings: ecueBackup (user name), ecueBackup! (password). Especially in case of a forgotten password for the first account, accessing the user configurations through the backup account resolves the issue.

- Provide an Internet connection for the LCE4 (Mutli-Range PSU / turbo) on setup. If necessary, with a running DHCP server to have an IP address assigned. Update Windows, SYMPHOLIGHT and the LAS. Enable and execute updates whenever available.

- Recommendation: Use the default power plan “ecue”. Do not use a power manager modus which includes “sleep“ since the LAS does not prevent a system shutdown. As per default, the high performance power management plan does not allow sleep modus.

6.3 Network Settings LCE4 (Mutli-Range PSU / turbo)

Additionally to the network connection to the Internet, the LCE4 (Mutli-Range PSU / turbo) is equipped with a second network adapter. This enables the integration of the LCE4 (Mutli-Range PSU / turbo) into the network of the lighting installation. Configure the network properties for the LCE4 (Mutli-Range PSU / turbo) as in every Windows OS, according to your network requirements:

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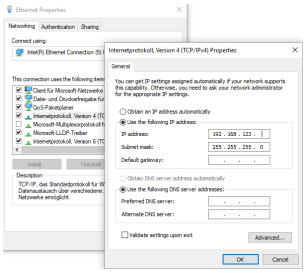
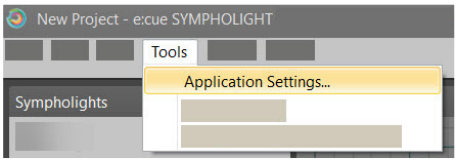


Use the preferred dedicated local network range 192.168.123.xxx with one system-internal network adapter.

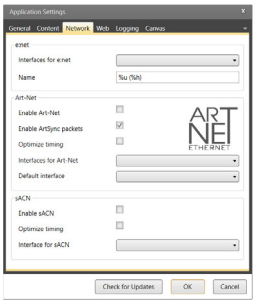
6.4 Network Settings SYMPHOLIGHT

The e:cue SYMPHOLIGHT application is pre-installed on the LCE4 (Mutli-Range PSU / turbo). SYMPHOLIGHT is a software application to design, test, and program medium to very complex lighting designs. Developed with superior usability in mind, e:cue SYMPHOLIGHT is a simple yet powerful lighting control software with an intuitive graphic user interface, based on advanced timeline programming. For SYMPHOLIGHT to communicate with the network devices in the installation, SYMPHOLIGHT has to be adjusted to the same network as all the other network components. The next steps describe how to set the network address in SYMPHOLIGHT. For further information about SYMPHOLIGHT, please refer to the SYMPHOLIGHT User Manual.

1. Start the SYMPHOLIGHT application.
2. Click on ***Tools*** in the top left menu and select ***Application Settings***:



3. In the pop up window ***Application Settings*** click on ***Network***:



4. Enter or select the IP address(es) of your network at ***Interfaces for e:net***.
5. Click ***OK*** to apply the changes. The pop up window closes and the network settings for SYMPHOLIGHT are now configured.

Notice that only the network settings for the SYMPHOLIGHT application have been set now. If you have further network devices installed, each of these devices have to be configured separately. See the SYMPHOLIGHT Setup Manual for details. Without a DHCP server, attach only one SYMPL node at a time; otherwise, identical IP addresses

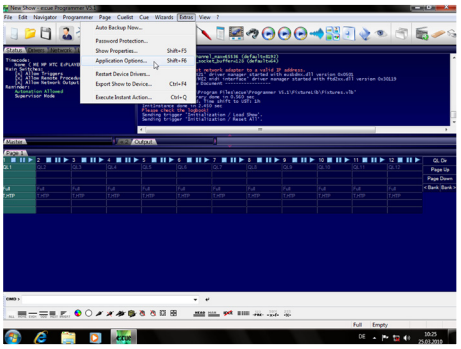
content

will conflict and disturb proper communication.

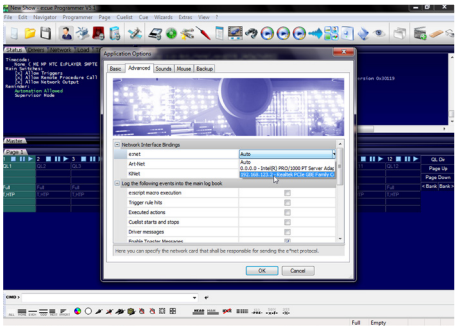
6.5 Network Settings LAS

The e:cue LAS is pre-installed on the LCE4 (Mutli-Range PSU / turbo). The LAS is a software for creating light shows and controlling complex lighting projects, and to control your network and all devices in it. For the LAS to communicate with the network devices in the installation, the LAS has to be adjusted to the same network as all the other components. The next steps describe how to set the network address in the LAS. For further details on the LAS, see the System Manual e:cue LAS.

1. Start the Programmer Enterprise.
2. Click on ***Extras*** and select ***Application Options***:



3. Under the ***Advanced*** tab, you can specify which network card the programmer software e:net outputs to. You can specify this setting for the Art-Net and KiNet protocols. e:cue recommends only outputting one protocol per network:



4. Click ***OK*** to apply the changes. The network settings for the LAS are now configured.

Notice that only the network settings for the SYMPHOLIGHT application have been set now. If you have further network devices installed, each of these devices have to be configured separately. For further details on the LAS, see the System Manual e:cue LAS.

content

7 Troubleshooting

Problem	Check	Reason	Details
System does not power up	Main switch on the back panel set to OFF?	If the main switch is set to OFF, the front button will not work.	Information for Use
Connected Ethernet devices are not found	Check correct e:net bindings in SYMPHOLIGHT / LAS. Check correct IP settings in Windows. Check the Ethernet cables for proper fit. Check the network switch.	There are at least two Ethernet ports in the LCE4. Use the correct one. The IP address must also be defined in Windows. The plugs might not be connected properly. The network switch might not work as specified.	Information for Use
The fan speed varies	This is correct, the fans are controlled by the system temperature.		

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8 Maintenance

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- Do not try to repair the device. Return it to your Traxon e:cue distributor for replacement or repair.
- The red front panel of the device must be mounted in operation (fire enclosure). Remove the red front panel only when device is disconnected from mains.
- Accessibility for children is prohibited while the red front panel is removed. Place no foreign objects inside the device when the red front panel is removed.
- Before dismounting, appropriate measures must be taken to protect the respective components against damage caused by electrostatic discharge (ESD protection).

8.1 Cleaning

Only external cleaning might be necessary. This cleaning may only be carried out by skilled personnel. To clean the device, disconnect it from the line power supply. Disconnect all devices connected to the server. Do not use any cleaning agents containing solvents (e.g. acetone, alcohol, or thinner) or abrasives. The housing surface can be cleaned with a moist, lint-free cloth. Ensure that no water penetrates into the housing. Otherwise, this could damage the electronics.

9 Dismounting

Shut down the system and disconnect from main power. Disconnect all attached cables. Dismount the e:cue LCE4 (Mutli-Range PSU / turbo) from the rack. The dismounting is completed.

⚠ Before dismounting, appropriate measures must be taken to protect the respective components against damage caused by electrostatic discharge (ESD protection).

In case of returning the device

When returning the device for any reason, e.g. for exchange, be sure to watch the following note:

Always care for proper backup of all user data like shows, images and media files. Data backup is responsibility of the user, Traxon e:cue cannot guarantee that user data are kept.

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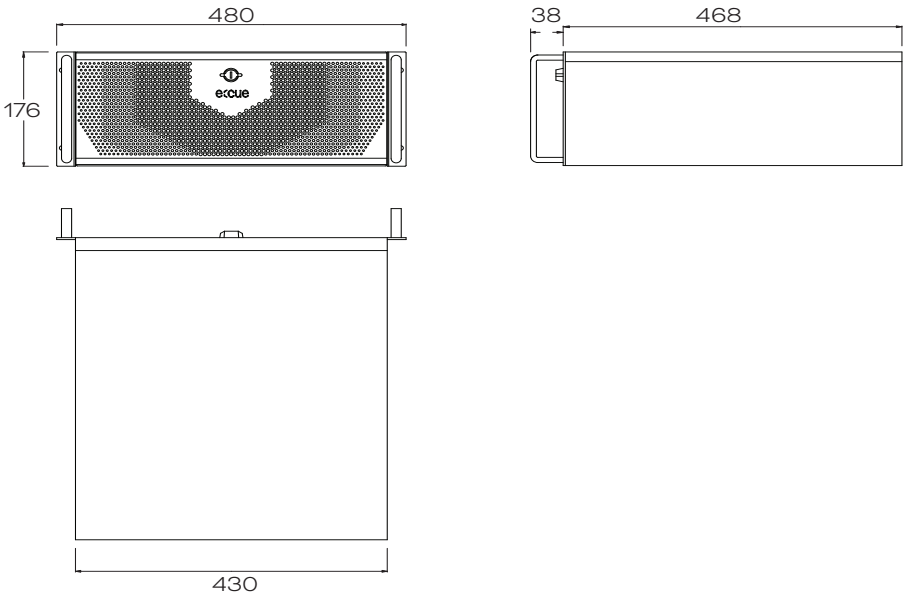
10 Certifications

CE

FC

11 Dimensions

All dimensions in mm



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