DATASHEET

Efficient Led Lighting

4 Channels

Up to 10A per channels

Up to 1kHz

IP54

CE

effiIPSC4

Pulse controller

INTRODUCTION

Table of contents

Applications

EFFILUX pulse controllers are designed for high throughput vision applications. They can control the power light to create bright flashes of high intensity that will be synchronized with the camera.

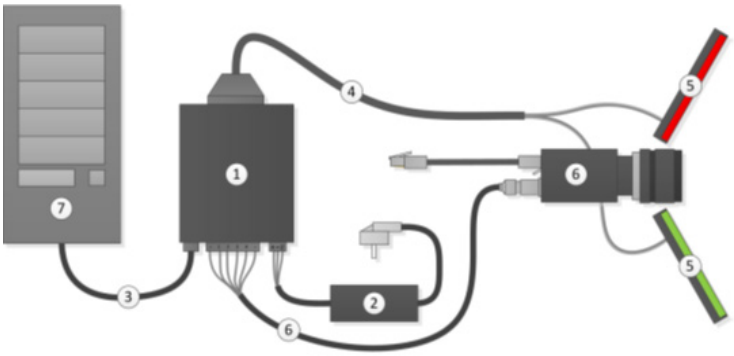
The principle is to feed the high-power LED lighting for very short times so as to provide a large amount of light for the time of acquisition.

PRESENTATION

Front panel view

Type	Status
POWER (Green) LED	
Solid on	Controller is powered
FAULT (Red) LED	
Strobing	System has a failure
Strobing simultaneously with the yellow LED	Controller is initializing, setting the controller's IP address and updating the firmware.
STROBE (Yellow) LED	
Flashing	Strobes at the same frequency than the actual IPSC4 output. The duration of the LED being turned on depends of the pulse length
Solid on	The controller is either in continuous or external switch mode. IPSC is driving outputs with continuous currents
ARMED (Yellow) LED	
Solid on	Indicates that the IPSC4 is armed and ready to deliver output current (ready for triggering pulse or in continuous mode)

Example of configuration



(1) EFFI-IPSC4 Pulse controller.
(2) Power supply: 24V DC - 5.5A.
(3) Cable for Ethernet communication.
(4) Cable for powering the illumination (available as accessory).
(5) LED illumination matching the power output performance of the EFFI-IPSC4 device (the illumination must not be equipped with any additional internal/ external control electronics).
(6) Trigger source (0-24V (voltagelevel for logical "1" is 3V)).
(7) PC with Microsoft Windows ®or Linux 32-/64Bit operating system for the configuration of the device with the software ScLibClient.

Notes:

- The EFFI-IPSC4 is not delivred with the different products present on the example.
- Check the output values (current and voltage) before connecting any lights to this product.

Key benefits and features

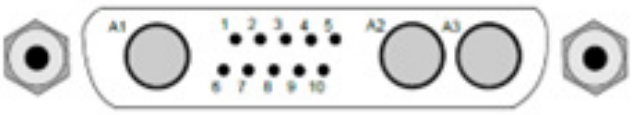
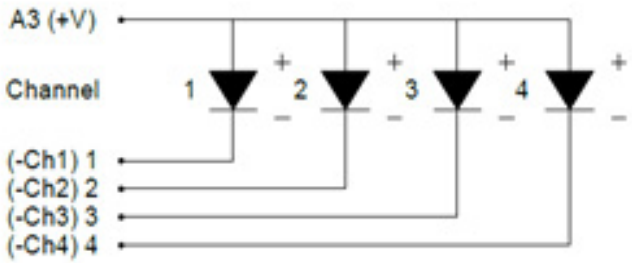
- 4 Output channels
- Control over Ethernet interface
- Max current pulse 10A @ 200V per channel
- Pulse width 1µs to 1000ms
- 4 Trigger inputs, 5V to 24V level
- 12V – 24V DC power supply
- 12V – 24V(depends on power supply) DC output for lighthead cooling fan
- Analog ID (AID) and AID check mode
- High frame rates
- Very small trigger latency ~2 microseconds
- Improved 10-bit D/A converter for current control

TECHNICAL SPECIFICATIONS

effiIPSC4	
Power Supply	24V DC
Power Consumption	132W max
Output connector	SUBD
Weight	680g
Dimensions	Width x length x height = 56mm x 130mm x 142mm
Fastener	4X M4 holes on the side of the device
IP rating	IP54
Operation environment	Temperature: -5°C to 50°C - Humidity: 20 to 85%RH (with no condensation) - Altitude: Up to 2000m
Storage environment	Temperature: -20° to 60°C - Humidity: 20 to 85%RH (with no condensation)
Informations	Overvoltage category I - Protective class III - Pollution degree 3
Regulations & Marking	CE - UKCA
Environmental Standards	RoHS Directives (2011/65/EU, 2015/863/EU and China RoHS) - REACH Regulation - WEEE Regulation
Country of Origin	France

ELECTRONICAL SPECIFICATIONS

Contact arrangement

Output Connector		
Contact arrangement	**Number**	**Designation**
 SUBD Male connector	1	-CH1, Channel 1
	2	-CH2, Channel 2
	3	-CH3, Channel 3
	4	-CH4, Channel 4
	5	Not connected
	6	Not connected
 Connected scheme for output	7	Analog ID
	8	Signal GND (GND for signals 7,9,10)
	9	Trigger Output Digital Signal, 3.3V LVTTL level
	10	Digital ID (1-Wire EEPROM interface, 3.3V LVTTL level)
	A1	12V – 24V DC, max 0.5A (for lighthead cooling fan)
	A2	Power GND
	A3	+V, Common Output voltage

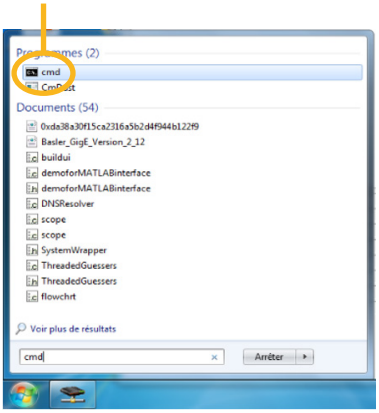
SOFTWARE

The included software ScLibClient allows users to set the LED lighting: current / Running mode / On Time / OFF Time. The sofware can be downloaded from EFFILUX website.

IP Adress

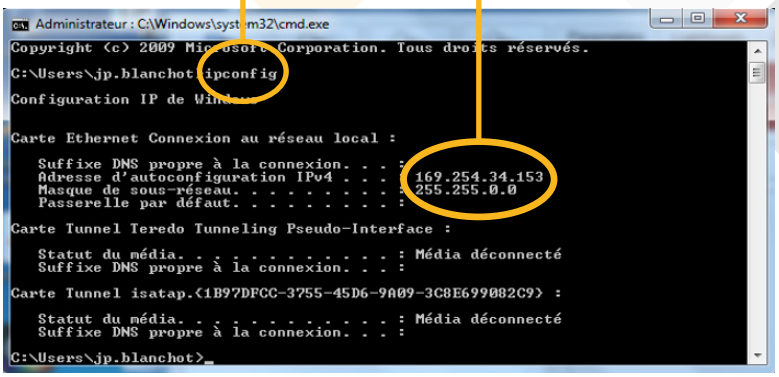
You need to know th PC IP adress to connect the EFFI-IPSC4.

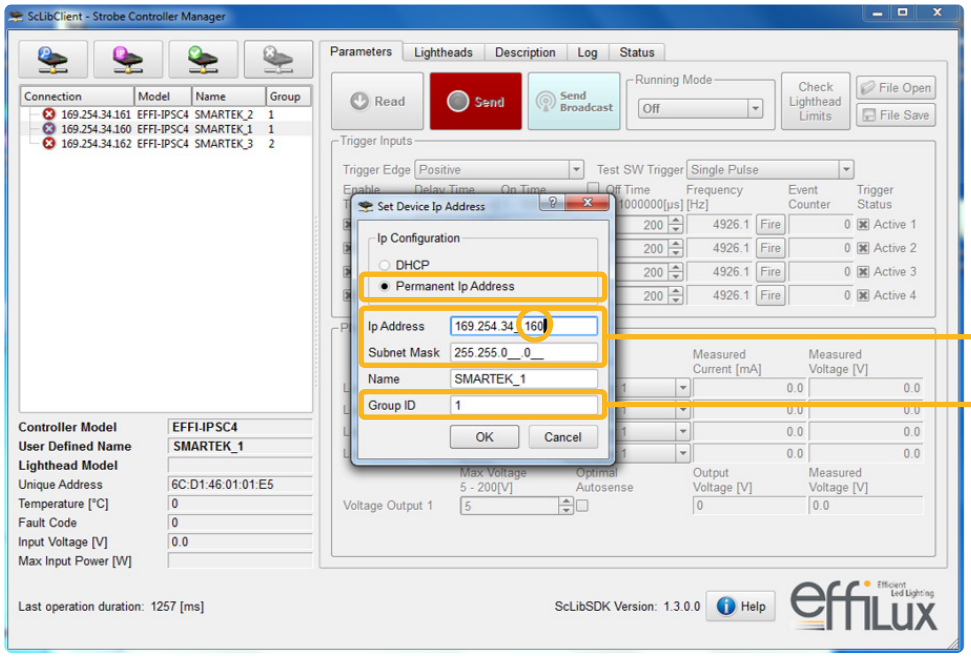
1. Type « cmd »

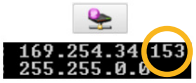


2. Type « ipconfig »

3. IP Address





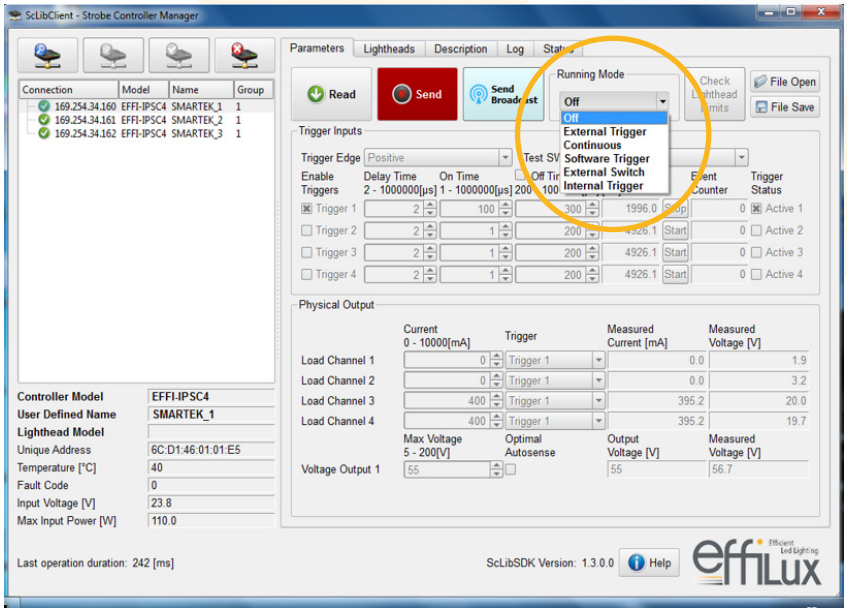


IP Adress : /!\ Change the last number

Choose group: from 0 (without group) to 254

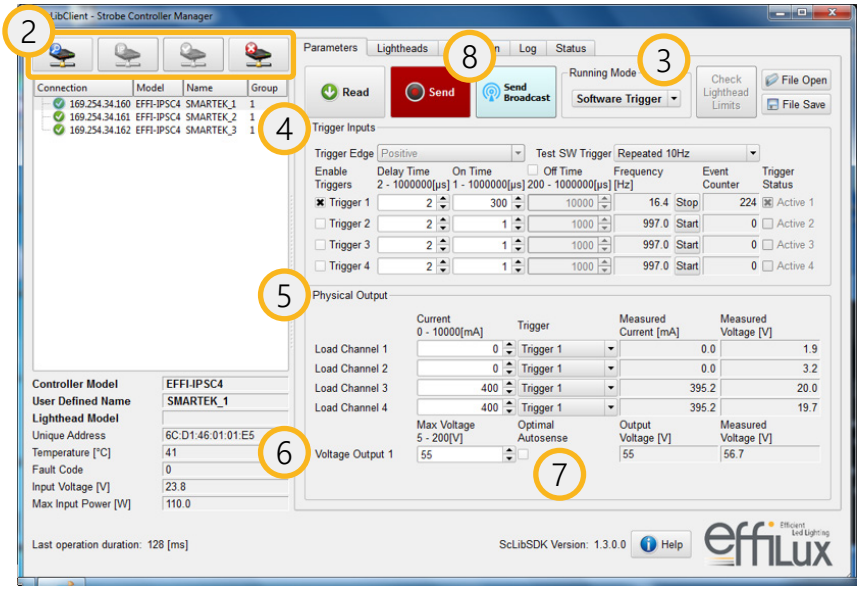
IP Adress

You can choose the running mode.



Running mode	Trigger setting by the software
Off	OFF
External Trigger	« On Time » + « Trigger Edge » + External trigger
Continuous	Continuous
Software Trigger	« On Time » + « Test SW Trigger »
External Switch	Full external setting by GBF
Internal Trigger	« On Time » + « Off Time »

IP Adress



1. Connect the EFFI-IPSC4

2. Allocated IP adress (las number different for each EFFI-IPSC4 + indicate «group ID»

3. Choose running mode

4. Indicate Trigger setting

5. Indicate current for each channel

6. Indicate Voltage output

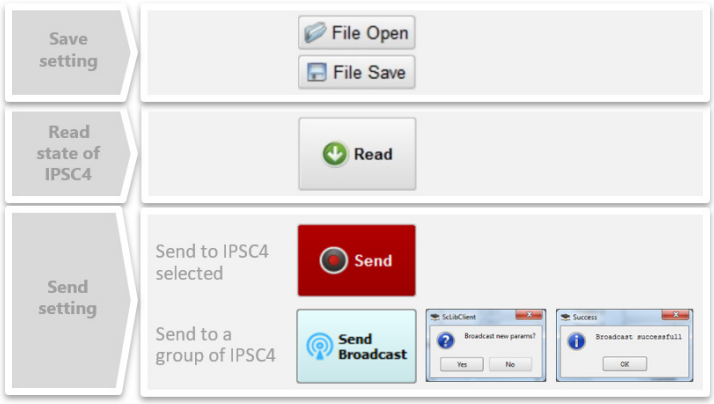
7. Do not check «Optimal Autosense»

8. «Send broadcast»

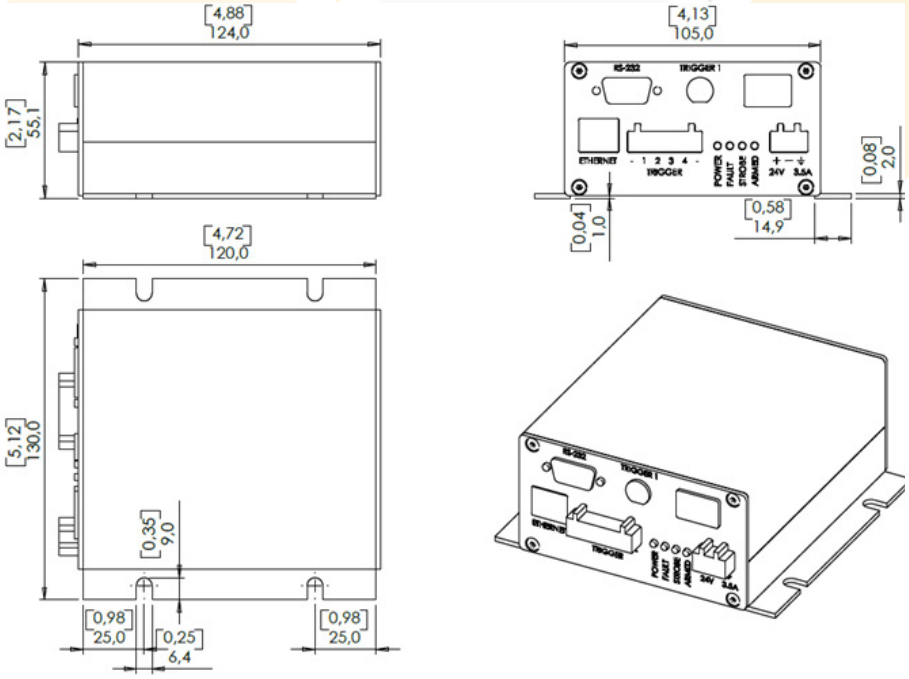
9. To switch off: Choose «Running mode»: OFF, then «Send Broadcast»

Send settings

You can choose the running mode.



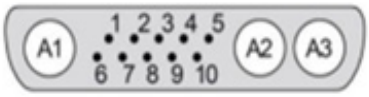
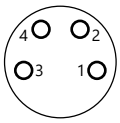
MECHANICAL SPECIFICATIONS



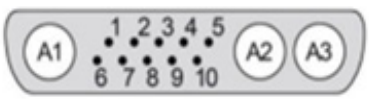
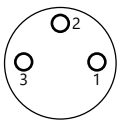
All dimensions are in mm [inch].

ACCESSORIES (TO BE PURCHASED SEPARATELY)

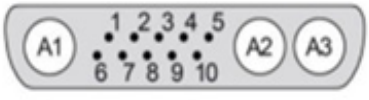
SUBD / M8 CONNECTOR 4 CONTACTS (For EFFI-RING)
2m: EFFC-CAB-M8-SUBD-FM-4-DD-L2
5m: EFFC-CAB-M8-SUBD-FM-4-DD-L5

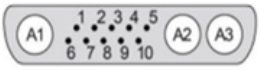
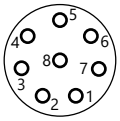
Designation	Cable Color	SUBD Contact arrangement (Male)		M8 Contact arrangement (Female)	EFFI-RING
+Vcommon	Brown		A3		1: +Vcommon
GND Channel1	White		1		2: GND Red/White
GND Channel 2	Blue		2		3: GND Blue/UV
GND Channel 3	Black		3		4: GND Green/IR

SUBD / M8 CONNECTOR 3 CONTACTS (For EFFI-LASE / EFFI-Sharp)
2m: EFFC-CAB-M8-SUBD-FM-3-DD-L2
5m: EFFC-CAB-M8-SUBD-FM-3-DD-L5

Designation	Cable Color	SUBD Contact arrangement (Male)		M8 Contact arrangement (Female)	EFFI-Lase / EFFI-Sharp
V+	Blue		A3		2 : V+
GND Channel 1	Black		1		1 : GND

SUBD – Direct control
2m: EFFC-CAB-M8-SUBD-M-BW-D-L2
5m: EFFC-CAB-M8-SUBD-BW-5-D-L5
10m: EFFC-CAB-M8-SUBD-BW-5-D-L10

Designation	Cable Color	SUBD Contact arrangement (Male)		Bare Wire	
+Vcommon	Brown		A3	Bare Wire	1
GND Channel1	White		1		2
GND Channel 2	Blue		2		3
GND Channel 3	Black		3		4

SUBD / M8 CONNECTOR 8 CONTACTS / (For EFFI-LASE-V2) 2m : EFFC-CAB-M8-SUBD-FM-8-DD-L2 5m : EFFC-CAB-M8-SUBD-FM-8-DD-L5								
Cable Color	**SUBD Contact arrangement (Male)**		**Designation**	**M8 Contact arrangement (Female)**		**With MX1 / LX1**	**With MX2**	**With MX3**
White		1	GND Channel 1		1	$-V_{LED}$	-VLED Z2	-VLED Z2
Brown		A3	+Vcommon		2	$+V_{LED}$	+VLED Z2	+VLED Z2
Green		2	GND Channel 2		3	n.c.	-VLED Z1	-VLED Z1
Yellow		A3	+Vcommon		4	n.c.	+VLED Z1	+VLED Z1
Grey		3	GND Channel 3		5	n.c.	n.c.	-VLED Z3
Pink		A3	+Vcommon		6	n.c.	n.c.	+VLED Z3
Blue		n.c.	n.c.		7	-TH Thermistor	-TH Thermistor	-TH Thermistor
Red		n.c.	n.c.		8	+TH Thermistor	+TH Thermistor	+TH Thermistor

CONTACT INFORMATION

Please refer to the specific documentation (datasheet, user manual and drawing) for complementary information. Contents of this document are based on information available as of July-2025 and may be changed without prior notice.

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