D-Lite 2 RX/it

D-Lite 4 RX/it

Service Manual

D-Lite RX 2 (20486.1)

D-Lite 2 it (20483.1)

D-Lite RX 4 (20487.1)

D-Lite 4 it (20484.1)

elinchrom
creative image lighting technology

TABLE OF CONTENT

1. SAFETY NOTICE

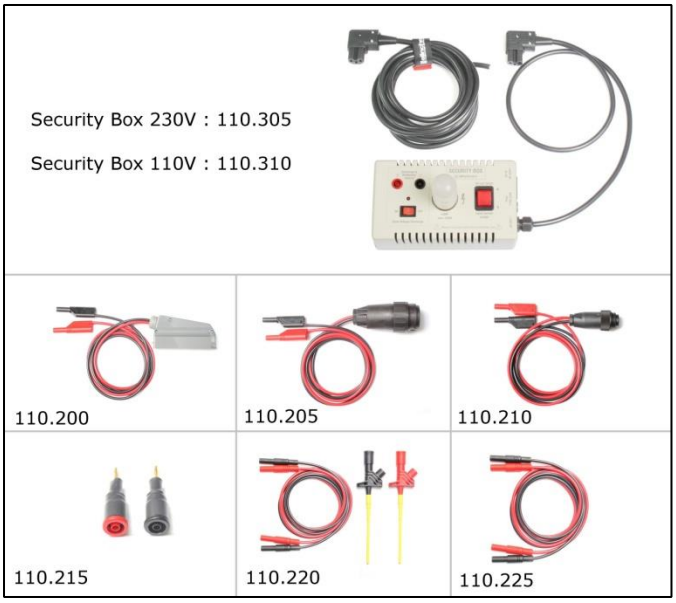
The interior of the Elinchrom devices contain components carrying dangerous levels of electric charge, even though the unit has been disconnected from the mains or without supply battery. **Before all servicing operations or repairs, you must execute the following discharge process:**

DISCHARGE PROCESS OF THE UNIT BEFORE SERVICING

Note: *The discharge process is best achieved with a suitable Elinchrom Security Box (discharging box)*

Code numbers:
110.305 Security Box 230V
110.310 Security Box 110V

110.200 Adaptor EL
110.205 Adaptor Ranger RX
110.210 Adaptor Ranger Quadra
110.215 Adaptor Style RX
110.220 Set of hook type test probe clip
110.225 Multimeter cables



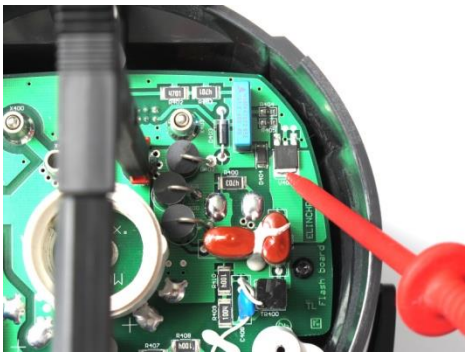
1. Set the device at minimum power	
2. Switch off the unit and remove the mains cable	
3. Remove pilot lamp and flashtube and trigger contact with suitable gloves	

4. Connect the discharge box (Elinchrom Service Kit) on the flashtube sockets X401, X404 and discharge the power on these connection points.

5. Remove the dish reflector and discharge the flash capacitors (HTD voltage) on the flashboard sockets X400, X403

Note: *do not touch the circuit boards until the end of this process*

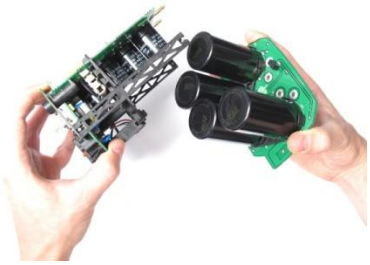
6. Discharge the Booster voltage on the following connection points:
Flashtube socket X404 (N BOOST), A2 of V400



7. Remove the circuits boards assembly from the housing with suitable insulated gloves.

8. Discharge the four doublers capacitors C301, C302, C303, C304 on the following connection points:

9. Now you can disassembling, repairing and servicing safely.



2. OPERATION INSTRUCTION

1. Make sure the mains switch[16] stays on position **O**.
2. Plug the power cable to the mains socket[6] and connect it **with a full earthed** source.
3. Plug the sync cord to the sync socket[15].
4. Turn on the unit by switching the mains switch[16] to the position **I**.
5. Select the power by pressing the push buttons for power decrease[4] and power increase[5].

Mise en service

1. Vérifier que l'interrupteur[16] soit sur **O**.
2. Brancher le cordon secteur livré sur la prise[6] et ensuite au réseau qui **soit munie d'une mise à la terre**.
3. Raccorder un câble de synchronisation sur la prise de synchronisation[15].
4. Enclencher l'appareil en basculant l'interrupteur[16] le mettre sur la position **I**.
5. Choisir la puissance du flash en agissant sur les touches[4] et[5].

Inbetriebnahme

1. Der Hauptschalter[16] muss auf **O** stehen.
2. Das Netzkabel an die Gerätedose[6] anschliessen und erst danach mit einer **geerdeten** Steckdose verbinden.
3. Synchro-Kabel an die dafür vorgesehenen Buchsen[15] anschliessen.
4. Das Gerät mittels Hauptschalter[16] einschalten (**I**).

Die Blitzleistung kann mit den Tastern Leistung verringern[4] und erhöhen[5] eingestellt werden.

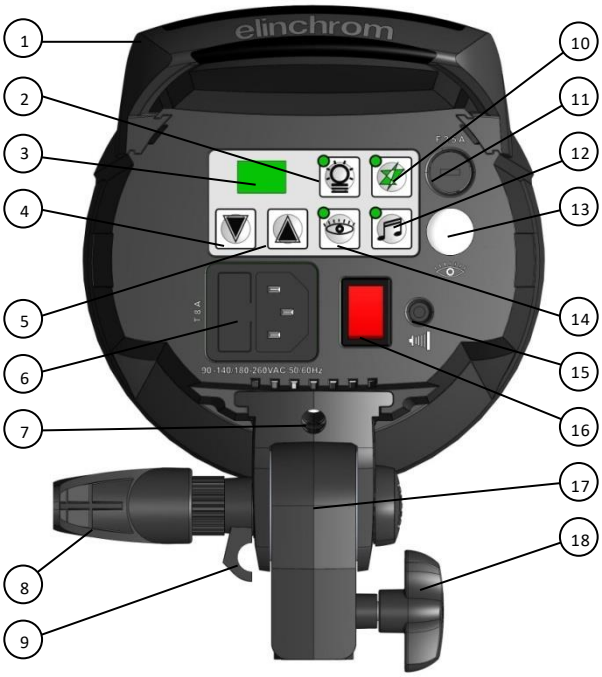


Figure 1: Control panel

INDEX

1. Handle
2. Modelling lamp switch (PROP, MIN, MAX, OFF)
3. Display
4. Power settings -
5. Power settings +
6. Mains socket with mains fuse (slow blow)
7. Umbrella tube (only for EL umbrellas, Ø 7mm)
8. Tilt bracket handle
9. Umbrella holder
10. Manual flash release with ready LED indicator
11. Modelling lamp fuse (fast blow)
12. Ready charge beep on/off
13. Photocell
14. Eye-Cell on/off
15. Synchronisation plug for 3.5 mm jack
16. ON /OFF
17. Tilt bracket
18. Clamping screw

Note: *According to the safety regulation; we draw your attention to the fact that this equipment should be used only in a dry environment. It must be protected from dripping water and from extremely dusty conditions. The unit must **always** be plugged into an **earthed** electrical socket.*

3. ASSEMBLY DRAWINGS

3.1. Main assembly

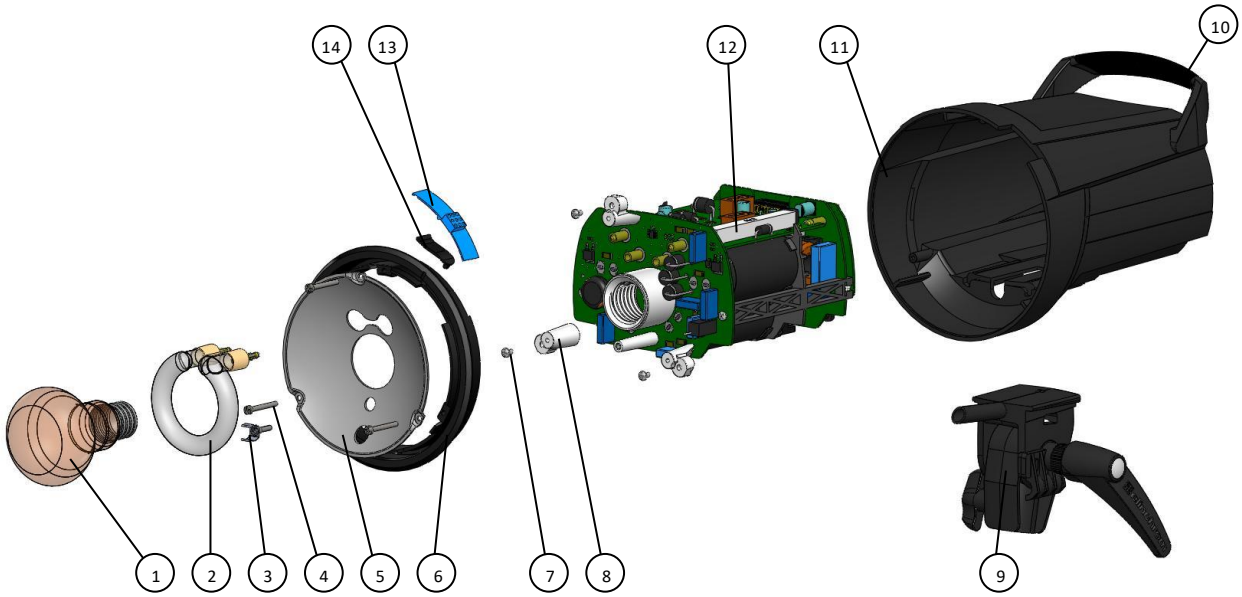


Figure 2: Main assembly

No	Qty	Description/Part
1	1	Modelling lamp
2	1	Flash tube
3	1	Trigger post pin
4	3	Self tapping screw 3x25
5	1	Reflector dish
6	1	Bayonet inner ring
7	3	Self tapping screw 3x5
8	3	Locking sleeve
9	1	Tilt bracket
10	1	Handle
11	1	Housing
12	1	Electronics assembly
13	1	Sliding button
14	1	Locking spring

3.2. Electronic boards assembly

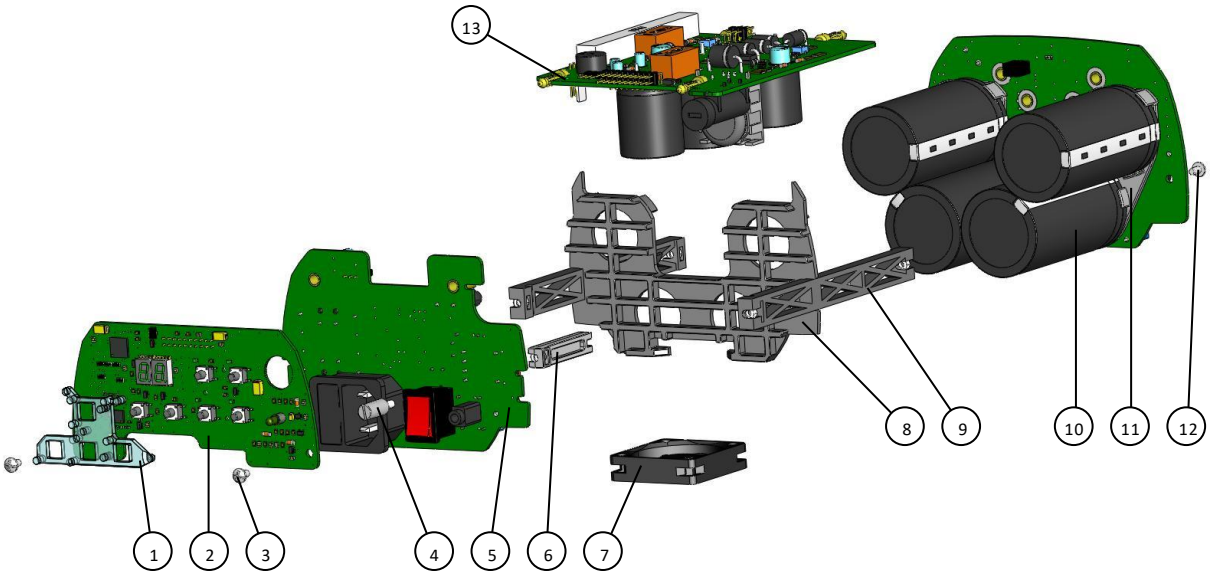


Figure 3: Electronic boards assembly

No	Qty	Description/Part
1	1	Light conductor disk
2	1	KBD board
3, 12	4	Screw M3x8
4	1	PCB outer support
5	1	Mains board
6	1	PCB inner support
7	1	3-wires fan (with tray for BX-Ri)
8	1	Capacitor rear support
9	2	Side support with M3 nuts
10	4	Flash board
11	1	Capacitor front support
13	1	Power board

4. SPARE PARTS

The following spare parts lists are just an overview. Only the spare parts displayed in the Elinchrom Web shop (Distributors Center) are available.

4.1. Mechanic

Description	Qty	Note	Elinchrom No	Picture
HOUSING D-LITE	1		**226.200**	
Plastic housing for D-Lite it	1	Figure 2: 11		
Keyboard Adhesive Foil	1			
Plastic bulb for Eye-Cell	1			
Handle	1	Figure 2: 10		
SIDE LABELS D-LITE RX 2 (Left & Right)	1		**226.221**	
SIDE LABELS D-LITE RX 4 (Left & Right)	1		**226.241**	
SIDE LABELS D-LITE 2 IT (Left & Right)	1		**226.220**	
SIDE LABELS D-LITE 4 IT (Left & Right)	1		**226.240**	
Keyboard Adhesive Foil D-Lite	1		**226.015**	
FAN DC5V 1.2W 40x40x10mm	1	Figure 3: 7	**226.105**	
BAYONET LOCKING SET	1		**226.205**	
Inner ring	1	Figure 2: 6		
Sliding button	1	Figure 2: 13		
Locking spring	1	Figure 2: 14		
COMPLETE D-LITE IT TILT HEAD	1	Figure 2: 9	**226.215**	
SET OF INNER FIXING PARTS	1		**226.210**	
Capacitor support (front)	1	Figure 3: 11		
Capacitor support (rear)	1	Figure 3: 8		
PCB support (inner)		Figure 3: 6		
PCB support (outer)	1	Figure 3: 4		
PCB support (side)	2	Figure 3: 9		
Screw M3x8	4	Figure 3: 3,12		
Nut M3	4	Figure 3: 9		
Locking sleeve with screw	3	Figure 4: 7,8		
REFLECTING DISH D-LITE (3 SREWS)	1	Figure 2: 4, 5	**226.030**	
Flashtube Plug-in S500	1	Figure 2: 2	**24009**	
MODELLING LAMP 100W 196V Modelling lamp **230V**	1	Figure 2: 1	**23002**	
MODELLING LAMP 100W 90-120V Modelling lamp **110V**	1	Figure 2: 1	**23006**	
10 FUSES 2.5A SP 5X20MM Fuse for modelling lamp	1		**19033**	
10 FUSES 8A FST 5X20MM Fuse for main supply	1		**19022**	
TRIGGER FORK	1	Figure 2: 3	**226.025**	

Note: *It is not possible to order single parts out of a set!*

4.2. Electronic boards

4.2.1. Mains board

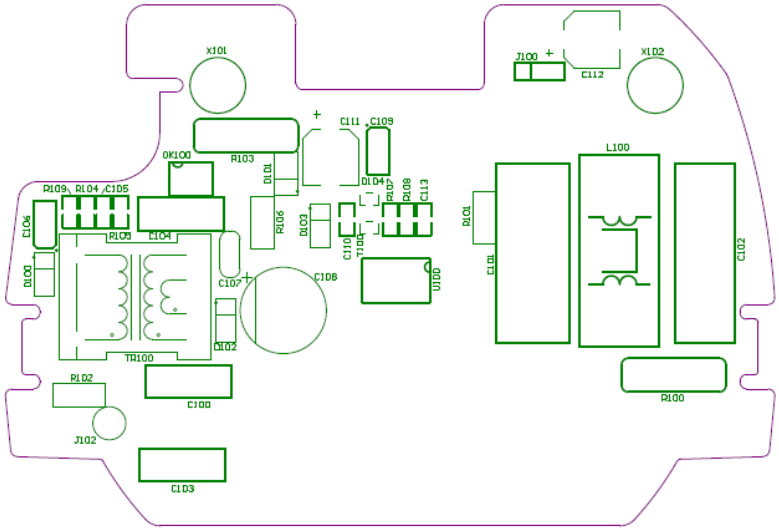


Figure 4: PCB Mains board

Description	Qty	Note	Elinchrom No	Picture
MAINS BOARD D-LITE	1		**14461B**	
MAINS SWITCH RED	1		**226.085**	

4.2.2. Keyboard

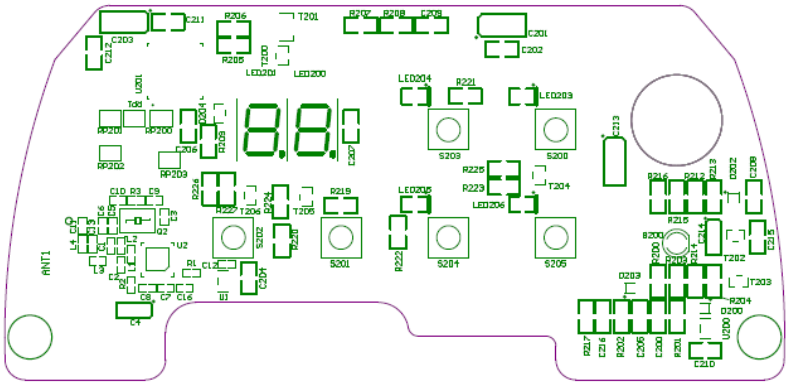


Figure 5: PCB KBD board

Description	Qty	Note	Elinchrom No	Picture
Keyboard D-Lite	1		**14464**	

Note: *Do always set the correct unit type after replacing the KBD board!*

4.2.3. Power board

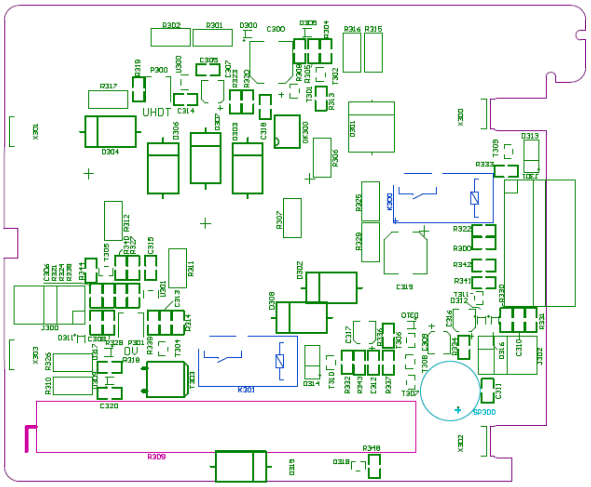


Figure 6: PCB Power board

Description	Qty	Note	Elinchrom No	Picture
POWER CONTROL BOARD D-LITE 2/4 IT	1	Adjusted	**14463**	
CAPACITOR 180µF 400V	4	Doubler capacitors	**14056**	
BUZZER (F/UCW06)	1	SP300	**107.026**	
POWER DIODE P600	1		**227.175**	

4.2.4. Flash board

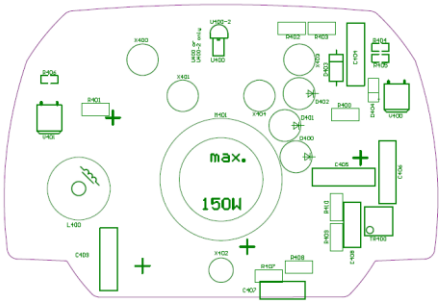


Figure 7: PCB Flash board

Description	Qty	Note	Elinchrom No	Picture
FLASHBOARD D-LITE 2	1		**14352**	
FLASHBOARD D-LITE 4	1		**14354**	

5. SERVICE MENU

5.1. How to operate in the Service menu

Action	Description	
Enter Service Menu	To enter the Service Menu press the three keys together for at least 2 seconds.	
Toggle	To toggle from the present sub menu to the next one push the modelling lamp button.	
Change value	Use the power up and down buttons to adjust the value.	
Save settings	Push the Eye-Cell button to save all changed settings.	
Exit Service Menu	Exit the Service Menu by pressing the beep button.	

5.2. Service Menu

Sub menu	Description	Display
Unit type	Sets the Unit type[1].	U.0 - U.3
Temperature[2]	Shows the current measured temperature [°C] of the device.	t.1 , 21 (**t** is blinking)
Frequency[2]	Shows the frequency [Hz] of the electric supply.	F.0 , 50 (**F** is blinking)
Charge delay	Sets the delay between the made flash and the start of the next charge. Default value = 0	d.0 - d.7
Fan control	Switches the fan control on and off. Default value = 1	F.0 - F.1

5.3. Unit type

Display	Description	Power range
U.0	D-Lite 2 RX/it	1.0 - 5.0
U.1	D-Lite 4 RX/it	2.0 - 6.0
U.2	D-Lite RX ONE	0.1 - 4.0
U.3	-	-

Note: *Do always set the correct unit type after replacing the KBD board!*

[1] More details in Chapter Unit type
Do not forget to set the correct unit type in the Service Menu after exchanging the KBD board!
[2] This sub menu is just an indication. It is not possible the make any settings.

6. Firmware Update mode

Action	Description	
Enter Update Mode	To activate the firmware Update mode. When the unit is OFF, hold Modelling button and Power Up button and switch the unit ON until LED shows "Ud" then release the buttons.	 **hold 3 sec**

7. Error messages

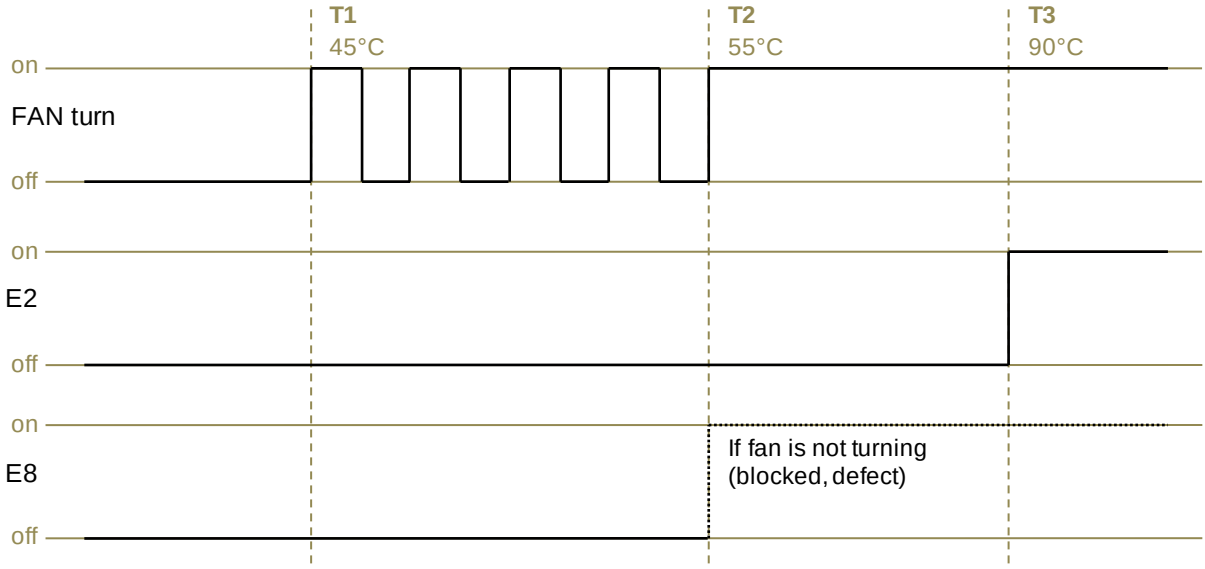
This error messages are shown by the units display if an error is detected by the units Micro-Controller.

Error	Fault	Description	Action
E1	Over voltage	▪ Short circuit on Power board (Diodes P600)	▪ Check and eventually replace the power diode P600 (D301) 227.175 on the Power Board. ▪ Replace the Power board (14463)
E2	Over temperature	▪ Unit is overheated ▪ Temperature sensor LM335 U400 defect (on the Flashboard) ▪ Fault on the Power board	▪ Wait for cooling ▪ Replace Flashboard (Temp. sensor) ▪ Replace Power board (14463)
E3	Auto discharge fault	▪ Discharge resistor defect	▪ Replace the discharge resistors or the whole Power board 14463
E4	Charge fault	▪ Charge circuit defect	▪ Replace the four doubler capacitors (14056) on the Power board or replace the whole Power board (14463)
E5	Mains supply fault	▪ Slack joint on Power board, Mains board or mains cable	▪ Check and eventually replace the Power board, Mains board and mains cable
E8	Fan management fault	▪ Fan defect or blocked	▪ Replace fan

7.1. Repair Assistance

	Fault	Description	Action
	Skyport problem	▪ Distance range problem, trigger missing, bad communication	▪ Replace Keyboard 14464
	Modelling lamp problem	▪ Modelling lamp always ON or always OFF	▪ Replace the Flash board
	Misfiring	▪ The unit don't flash all the time	▪ Replace the Flashtube (24009) or the Flash board
	Unit not recognized	▪ The unit is not recognized in the Skyport system when more than one unit is ON	▪ See Technical-Note-020 in the online Distributors Technical Center.
	Unit flash spontaneously	▪ The unit flash spontaneously, like a strobe once powered-on	▪ Replace Keyboard 14464

8. FAN CONTROL



Note: *You may disable the Fan control (see* section *Service menu*) so that *the error E8 cannot occur.*

9. FLASH VOLTAGE AND OVER VOLTAGE ADJUSTMENT

9.1. Overview

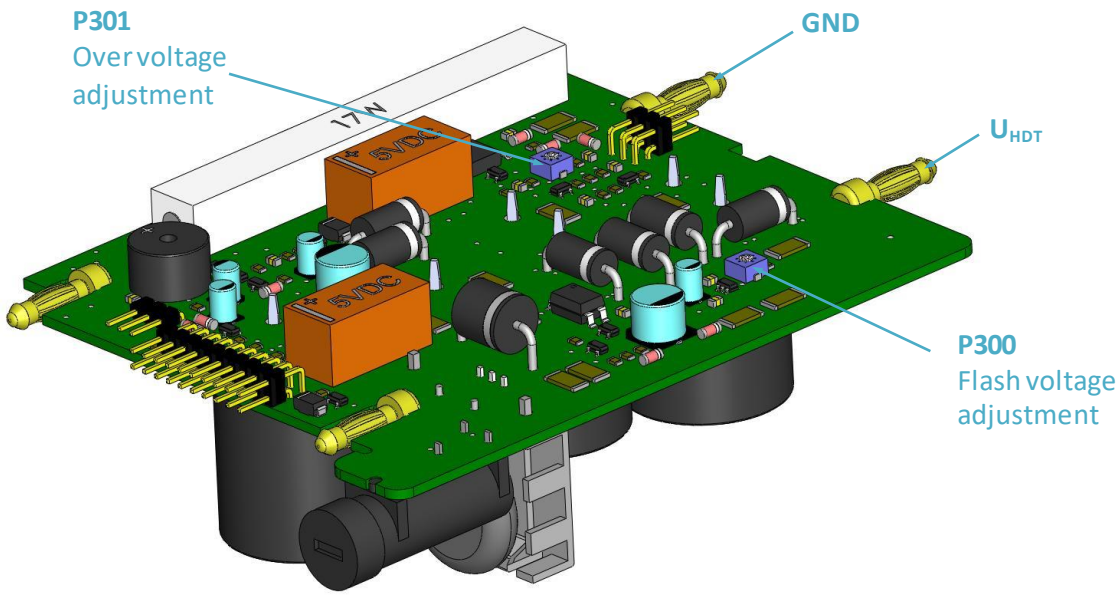
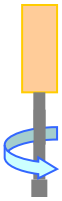
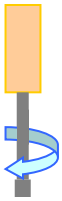


Figure 8: Voltage adjustment on Power board

Rotation direction

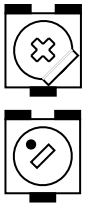


CCW
Counter clock wise

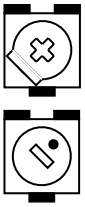


CW
Clock wise

Trimmer end positions



Position 1

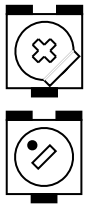


Position 2

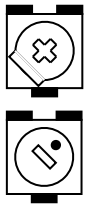
Note: *Check the exact end position; do not turn over end position!*

9.2. Adjustment procedure

1. Make sure that the unit electronic module (all electronic boards) are mounted together correctly
2. Adjust Trimmer **P300** and **P301** to its default positions:
   - **P300** (HDT) to **Position 1**
   - **P301** (OV) to **Position 2**
3. Connect a Voltmeter[1] to **GND** and $\mathbf{U_{HDT}}$ on the Power board (see Figure 8) or to the flash tube connectors on the Flash board.
4. Connect mains power[2], but keep it switched off
5. Switch on the mains switch on the KBD board
6. Switch **on** the mains supply for the unit electronic module
7. Check the measured voltage U_{HDT};
   - If $\mathbf{U_{HDT} > 300\ V_{DC}}$ you have to switch unit OFF **immediately** then control the trimmer positions or search for an electronic fault!
8. Flash 5 times to format the flash capacitors
9. Set the Power to its maximum value[3]
10. Check the measured voltage U_{HDT};
    - If $\mathbf{U_{HDT} > 300\ V_{DC}}$ you have to switch unit OFF **immediately** then control the trimmer positions or search for an electronic fault!
11. Adjust **P300 CCW** to U_{HDT} = 358V_{DC} ± 3V
12. Adjust **P301 CW**
    - slowly in small steps, until Power relay switches **OFF** ("E1" will occur on the display)
13. Switch **off** the mains supply for the unit electronic module
14. Adjust **P300** to **Position 1** and wait for at least 5 seconds!
15. Switch **on** the mains supply for the unit electronic module
16. Adjust **P300 CCW** to U_{HDT} = 335 V_{DC} ± 3V



Position 1



Position 2

[1] Select High-Voltage 500 V_{DC} /1000V_{DC}
[2] 115V_{AC} or 230V_{AC} , with 50/60 Hz
[3] See section **Erreur ! Source du renvoi introuvable.** for type specific maximal power value.

17. Flash 5-times to format flash capacitors
18. Switch **off** the mains supply for the unit electronic module
19. Disconnect mains power
20. **Wait until flash voltage is discharged, or discharge with external discharge resistor!**

Discharge and check **always** the flash capacitor and the doubler voltage for **HIGH VOLTAGE** before touching or handling the electronic module!

10. COMPATIBILITY WITH D-LITE 2 / 4 (PREVIOUS VERSIONS)

It is possible to use boards form **D-Lite RX/it** (V_{05} or higher) as replacement parts in a **D-Lite** (V_{01}- V_{04}) device, but not in the reverse way!

11. KNOWN PROBLEMS AND FAQ

For a complete up-to-date list with all known problems and its solutions please login on your online Elinchrom support account (*http://www.elinchrom.ch*). There you may also find a file for frequently asked questions.