English

Futurelight
LIGHTING SYSTEMS MADE IN EUROPE

# User manuals

# Scan SC - 780

## Table of contents

English

**CAUTION !**
**Keep this device away from rain and moisture !**
**Unplug mains lead before opening the housing !**

**FOR YOUR OWN SAFETY, PLEASE READ THIS USER MANUAL CAREFULLY BEFORE YOU INITIAL START - UP!**

# 1. Safety

## 1.1 Safety instructions

This device has left our premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this manual. The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual or any unauthorized modification to the device.

DANGER HIGH VOLTAGE

**Caution ! Be careful with your operations.**
**With a voltage of 230 V you can suffer**
**a dangerous electric shock when touching the wires !**

DANGER HIGH VOLTAGE

This device falls under protection class I. Therefore it is essential to connect the yellow / green conductor to earth.
The electric connection must be carried out by a qualified employee.
Do not connect this device to a dimmer pack.
For replacement use lamps and fuses of same type and rating only.

**CAUTION ! EYEDAMAGES !**
**Avoid looking directly into the light source**
**(meant especially for epileptics) !**

## 1.2 General instructions

Please do never run the device without lamp!
Use this projectors in closed rooms only.
Do not shake this device. Avoid brute force during operational actions.
For safety reasons unauthorized modifications to the device are forbidden.
You can install this projector at any desired place - as long as you follow the given instructions. Ensure that the structure to which you attach the projector is secure.
If the device has been exposed to drastic temperature fluctuation (e.g. after transportation), do not switch it on immediately. The arising condensation water might damage your device. Leave the device switched off until it has reached room temperature.
When taking the device into operation, please make sure that the housing is closed firmly with all the necessary screws tightened up.

# 2. Introduction

Thank you for having chosen a FUTURELIGHT SC-780. You acquired a versatile, powerful and intelligent lighting-effect.
Unpack your FUTURELIGHT SC-780 and make sure that there are no damages caused by transportation. Should there be any, please consult your local dealer and do not take the device into operation.

## 2.1 Fitting the lamp

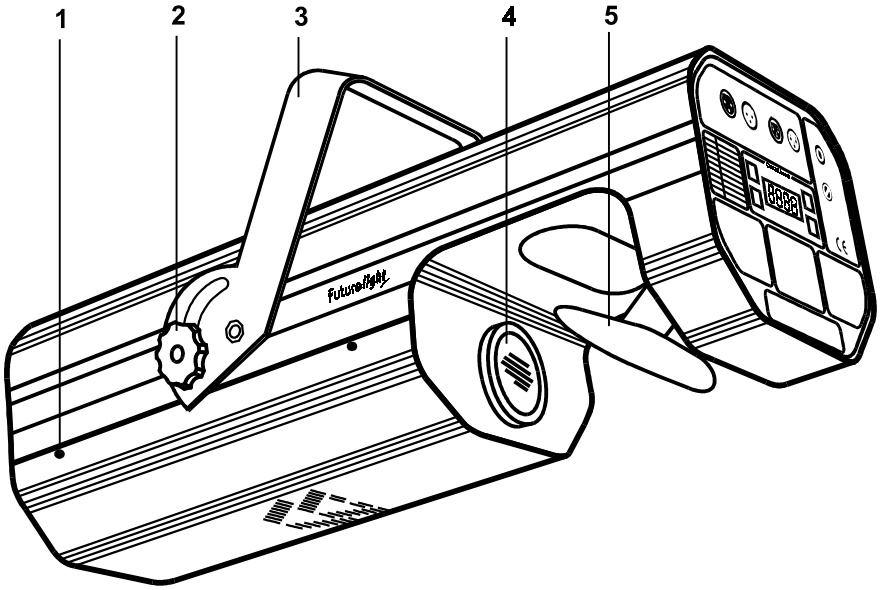
DANGER HIGH VOLTAGE

**DANGER !**
**Install the lamps with the device switched off only.**
**Unplug from mains before !**

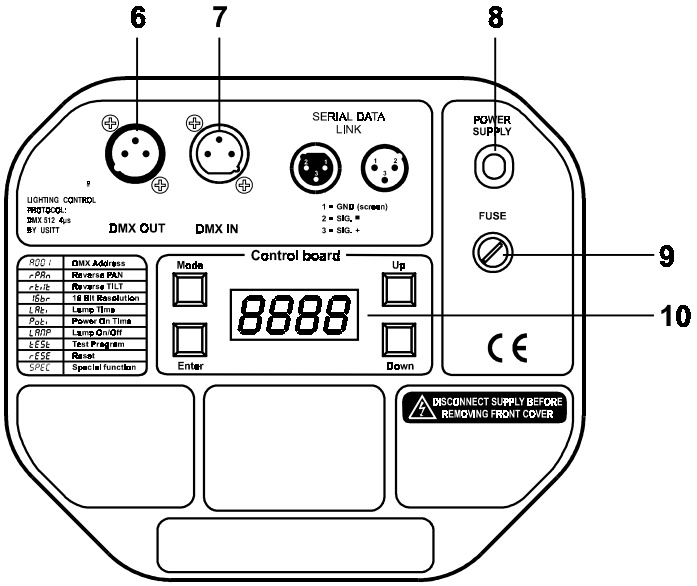
DANGER HIGH VOLTAGE

To insert the lamp (HMI 575) open the housing by loosening the fastening screws at the side panels and frontcover. Do not install a lamp with a wattage! A lamp like this generates temperatures the device is not designed for. Damages caused by non-observance are not subject to warranty.
Insert the lamp now. Do not touch the glass-bulb bare-handed during the installation! Please follow the lamp manufacturer's notes!
Before you close the housing again, make sure that the lamp is installed tightly into the lampholder system. Reclose the housing and tighten the fastening screws.

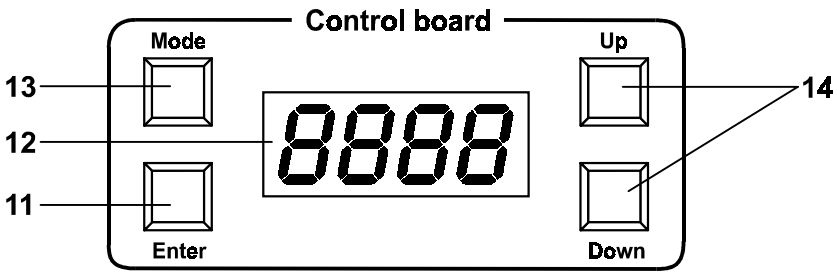
**Do not operate this device with opened service-lid!**




**1** - Fastening screws
**2** - Fixation screw for bracket
**3** - Bracket
**4** - Objective
**5** - Mirror

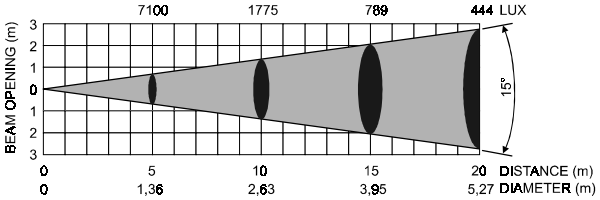



**Rearpanel:**
**6** - DMX Output
**7** - DMX Input
**8** - Powercord
**9** - Fuseholder
**10** - Control board

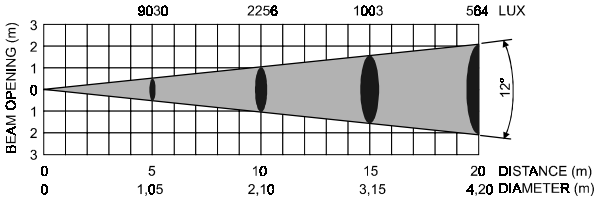



**Control board:**
**11** - Enter-button
**12** - Display
**13** - Mode-button
**14** - Up/Down-buttons

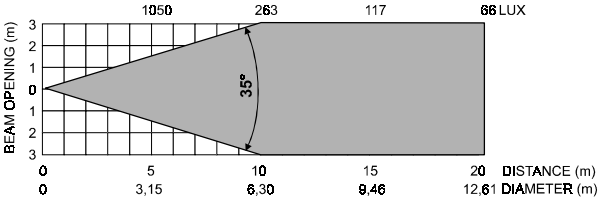
**STANDARD WIDE OBJECTIVE**



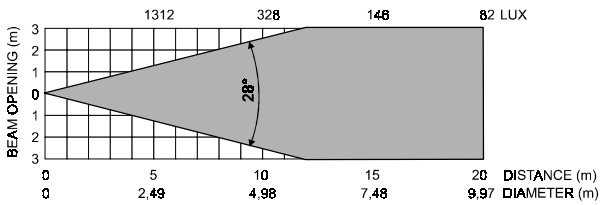

**OPTIONAL NARROW OBJECTIVE**




**STANDARD WIDE OBJECTIVE WITH FROST**




**OPTIONAL NARROW OBJECTIVE WITH FROST**




**Powerful scanner with many features**

For extremely bright 575 W HMI-lamp • 11 different, dichroic colour-filtres and white • Via 2 correction-filters, up to 36 different colours and semi-colours can be created • Motorized focus controllable via DMX • Rainbow-effect in both directions • Gobo-wheel 1 with 11 static gobos, of which are 1 multicolor-dichro-gobo, 2 dichro-gobos and open • Via the combination between dichro-gobos and color-wheel or multicolor-dichro-gobo even more colour-combinations possible • Gobo-wheel 2 with 6 rotating gobos, of which are 1 metal, 4 glass-gobos, 1 dichro-gobo and open • 5 additional metal-gobos are included • The rotating gobos can be turned by 360°, the adjusted position is memorized • Effect-wheel with correction-filters 3200 K and 5600 K, frost-filter, UV-filter and rotating 3-facet-prism • Strobe-effect with adjustable speed (1-10 flashes/sec.) via shutter • Shutter controlled via 2 stepper-motors • Steplessly adjustable iris • 12 high-quality stepper-motors for smooth mirror-movements • 16-bit-resolution or 8-bit-resolution for the mirror-movements (64 microsteps) • 15°-wide-angle objective (12° optional) • Reduced noise via adjustable fan-power • Self-resetable thermo-fuse • Integrated control-unit for digital adjustment of starting-address, lamp-operation, etc. • DMX-control via every standard DMX-controller • 14/16 DMX-control-channels required • Suitable FUTURELIGHT controllers: C-64 MKII controller, C-128 controller, CP-192 controller

# 3. Installation

## 3.1 General instructions

**DANGER OF FIRE !**
**When installing the device, make sure there is no highly inflammable material (decoration articles, etc.) in between a distance of min. 0,5 m.**

The projectors can be installed in any position without altering its operation characteristics.

**Make sure that the device is fixed properly ! Ensure that the structure to which you are attaching the projectors is secure**

For fixing the projectors use the hole provided in the bracket. The hole in the adjustable mounting bracket has a diameter of 10 mm.
For overhead use, fit a safety chain or cord.

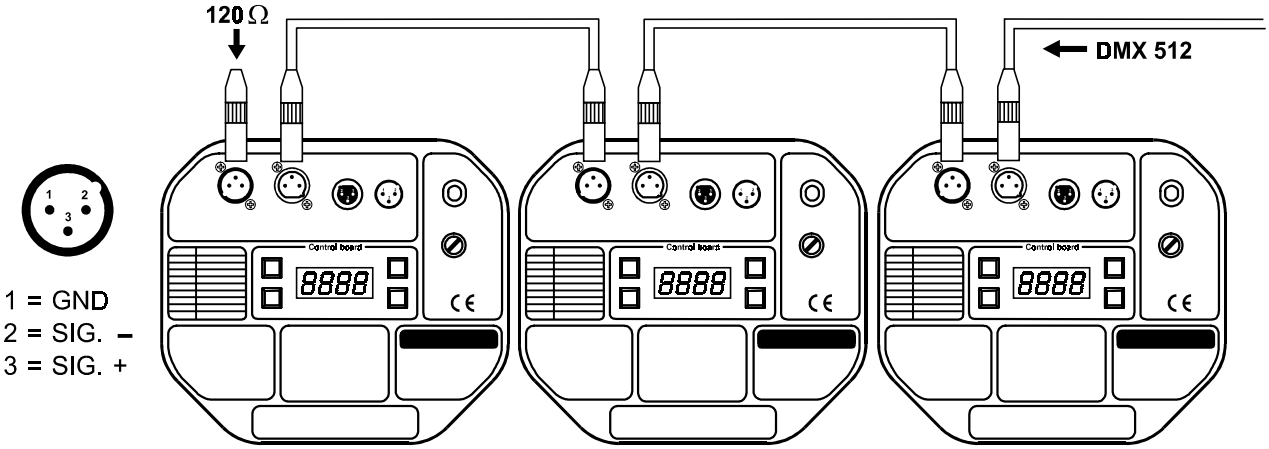
## 3.2 Connection to the mains

Connect the projector to the mains with the enclosed power-plug.

## 3.3 DMX-512 connection / connection between projectors

Connect the controller to the projector or one projector to another only by a stereo shielded cable and 3-pin XLR-plugs.

**Caution:** At the last scanner, the DMX-cable has to be terminated with a 120W resistor. Solder the resistance into a 3-pin XLR-plug and plug it in the DMX output of the last scanner.



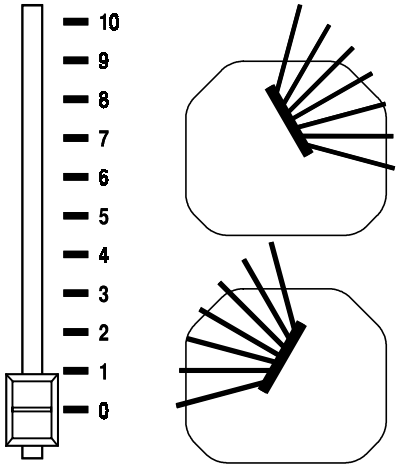

**The wires must not come into contact with each other, otherwise the projectors will not work at all, or will not work properly.**

# 4. Setup

## 4.1 Function of the control channels - 16 bit protocol

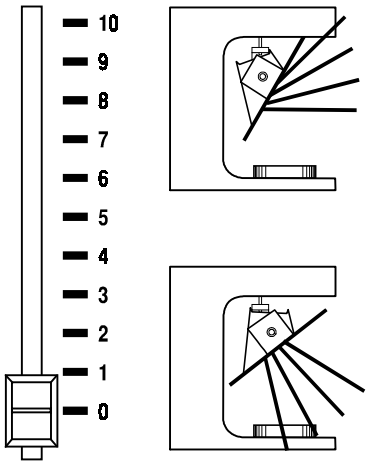
### 4.1.1 Channel 1 - Pan

Push slider up in order to move mirror horizontally (PAN).
Gradual mirror adjustment from one end of the slider to the other (0-255, 128-center). The mirror can be stopped at any position you wish.




### 4.1.2 Channel 2 - Tilt

Push slider up in order to move mirror vertically (TILT).
Gradual mirror adjustment from one end of the slider to the other (0-255, 128-center). The mirror can be stopped at any position you wish.



### 4.1.3 Channel 3 - Pan fine 16bit

### 4.1.4 Channel 4 - Tilt fine 16bit

### 4.1.5 Channel 5 - Speed of PAN / TILT movement

| | |
|---|---|
| 0 | Max speed |
| 249 | Min. speed |
| 250 - 255 | Max. speed, black-out while moving |

### 4.1.6 Channel 6 - Switch On / Off the lamp, reset, speed control of cooling fan

| | |
|---|---|
| 0 | open, max. speed of fan |
| 127 | open, min. speed of fan (silent operation) |
| | from 0 to 127 - decreasing speed of fan |
| 128 - 139 | Switch On the lamp, reset, open position |
| 140 - 239 | No function |
| 230 - 239 | Switch Off the lamp after 3sec. |
| 240 - 255 | No function |

### 4.1.7 Channel 7 - Colours

Linear colour change following the movement of the slider. In this way you can stop the colour-wheel in any position - also between two colours creating double-coloured beams.

| | |
|---|---|
| 0 | Open / white |
| 10 | Turquoise |
| 21 | Red |
| 32 | Cyan |
| 42 | Green |
| 53 | Magenta |
| 64 | Light Blue |
| 74 | Yellow |
| 85 | Green |
| 96 | Pink |
| 106 | Blue |
| 117 | Orange |
| 128 - 190 | Forwards rainbow effect from fast to slow |
| 191 - 192 | No rotation |
| 193 - 255 | Backwards rainbow effect from slow to fast |

### 4.1.8 Channel 8 - Static gobos

| | |
|---|---|
| 0 - 63 | Open |
| 64 - 95 | Forward gobo-wheel rotation from fast to slow |
| 96 | Static |
| 97 - 127 | Backward gobo-wheel rotation from slow to fast |
| 128 - 134 | Gobo 1 (multicolor dichro) |
| 135 - 140 | Gobo 2 (dichro) |
| 141 - 153 | Gobo 3 (dichro) |
| 154 - 166 | Gobo 4 |
| 167 - 179 | Gobo 5 |
| 180 - 191 | Gobo 6 |
| 192 - 204 | Gobo 7 |
| 205 - 217 | Gobo 8 |
| 218 - 230 | Gobo 9 |
| 231 - 243 | Gobo 10 |
| 244 - 255 | Gobo 11 |

### 4.1.9 Channel 9 - Dimmer, frost, correction filters, 3-facet prism :

| | |
|---|---|
| 0 - 95 | Open position (hole) |
| 96 - 127 | Frost filter |
| 128 - 159 | 3-facet prism |
| 160 - 191 | 3200 K correction filters |
| 192 - 223 | 5600 K correction filters |
| 224 - 255 | UV filter |

### 4.1.10 Channel 10 - 3 facet prism rotation control

| | |
|---|---|
| 0 | No rotation |
| 1 - 126 | Forwards rotation from fast to slow |
| 127 - 128 | No rotation |
| 129 - 255 | Backwards rotation from slow to fast |

### 4.1.11 Channel 11 - Rotating gobos, cont. rotation

| | |
|---|---|
| 0 - 31 | Open |
| 32 - 63 | Rot. gobo 1 (dichroic) |
| 64 - 95 | Rot. gobo 2 (glass) |
| 96 - 127 | Rot. gobo 3 (glass) |
| 128 - 159 | Rot. gobo 4 (glass) |
| 160 - 191 | Rot. gobo 5 (glass) |
| 192 - 223 | Rot. gobo 6 (metal) |
| 224 - 255 | Rot. gobo wheel cont. rotation slow to fast |

### 4.1.12 Channel 12 - Rotating gobo index, rotating gobo rotation

| | |
|---|---|
| 0 - 127 | Gobo indexing |
| 128 - 191 | Forwards gobo rotation from fast to slow |
| 192 | No rotation |
| 193 - 255 | Backwards gobo rotation from slow to fast |

### 4.1.13 Channel 13 - Iris

| | |
|---|---|
| 0 | Open |
| 1 - 179 | Max. diameter to min. diameter |
| 180 - 191 | Closed |
| 192 - 223 | Pulse closing slow to fast |
| 224 - 255 | Pulse opening fast to slow |

### 4.1.14 Channel 14 - Focus

| | |
|---|---|
| 0 - 255 | Continuous adjustment from far to near |

### 4.1.15 Channel 15 - Shutter, Strobe

| | |
|---|---|
| 0 - 31 | Shutter closed |
| 32 - 63 | No function (Shutter open) |
| 64 - 95 | Strobe-effect from slow to fast (max. 10 flashes/second) |
| 96 - 127 | No function (Shutter open) |
| 128 - 159 | Pulse-effect in sequences |
| 160 - 191 | No function (Shutter open) |
| 192 - 223 | Random strobe-effect from slow to fast |
| 224 - 255 | No function (Shutter open) |

#### 4.1.16 Channel 16 - Dimmer intensity

| | |
|---|---|
| 0 - 255 | Gradual adjustment of the dimmer intensity from 0 to 100 % |

## 4.2 Function of the control channels - 8 bit protocol:

| DMX Channel | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Function | PAN | TILT | PAN/TILT SPEED | FAN ON/OFF LAMP | COLOURS | GOBOS | EFFECTS PRISM DIMMER | PRISM ROTATION | ROTATING GOBOS | GOBO ROTATION | IRIS | FOCUS | STROBO | DIMMER |

# 5. Addressing the SC-780

The control board on the top side of the SC-780 allows you to assign the DMX fixture address, which is defined as the first channel from which the SC-780 will respond to the controller.
If you set, for example, the address to channel 5, the SC-780 will use the channel 5 to 20 for control.
Please, be sure that you don't have any overlapping channels in order to control each SC-780 correctly and independently from any other fixture on the DMX data link.
If two, three or more SC-780 are addressed similarly, they will work similarly.

**For address setting follow this procedure :**

**1.** Switch On the SC-780 and wait until the fixture reset has finished (**"rSt"** is flashing at the display).
**2.** Press the [Mode] key in order to access the main menu. Browse through the menu by pressing the [Up] and [Down] keys until the display shows **"A001"**. Confirm by pressing [Enter] key and the letter **"A"** will flash.
**3.** Use the [Up] and [Down] keys to select the desired address.
**4.** Confirm by pressing [Enter] or [Mode] to cancel.

**Controlling:**

After having addressed all SC-780 , you may now start operating these via your lighting controller.
**Note:**
After switching On, the SC-780 will automatically detect whether DMX 512 data's are received. If there are not received these data's at the DMX input, the display will start to flash **"A001"** with actually set address.
This situation can be occurred if:
there is not connected the 3 PIN XLR plug (cable with DMX signal from controller) in the input of the SC-780
the controller is switch Off or is failed the cable or connector is failed or the signal wires are swap in the input connector.
**Note:**
It's necessary to insert the XLR termination plug (with 120 Ohm) in the last lighting in the link in order to ensure proper transmission on the DMX data link.

# 6. Remotely Controllable Functions:

## 6.1 Lamp

The SC-780 is run with a HMI 575 lamp.
A relay inside of the SC-780 allows you to switch On and Off the lamp via itself control board on the top side or via your controller without affecting the rest of the lighting.

## 6.2 Switching On and Off the lamp by control board

**1.** Switch On the SC-780 and wait until the fixture reset has finished.
**2.** Press the [Mode] key in order to access the main menu. Browse through the menu by pressing the [Up] and [Down] keys until the display shows **"LAMP"**. Confirm by pressing [Enter] key.
**3.** Use the [Up] and [Down] keys to select **"On"** for switch On the lamp and **"Off"** for switch Off the lamp and press [Enter] to confirm or [Mode] to cancel.

**Note:**
If you switch On the lamp by control board, then switch Off the SC-780 and again switch On the whole unit, the lamp will automatically Switch On.
If you switch Off the lamp by control board, then switch Off the SC-780 and again switch On the whole unit, the lamp will not shine. (you have to use for Switch On the control board again or external controller).

It is also important to note, that the discharge lamp is cold restrike types, that means, that they have to be cold before re-striking. For this reason, you have to wait 5 minutes (max. speed of fan must be adjusted) after having switched Off the lamp before you can switch it back On again. If you try to switch On the lamp within 5 minutes after having switched it Off, the SC-780 will store this information and automatically ignite the lamp when the 5 minutes period has expired. The message **"HEAt"** will appear on the control board display at the back side of the SC-780. If the ignition of the lamp is seven times unsuccessful, on the display will appear **"LA.Er"**, meaning that the lamp could be damaged or even missed, or there could be a failure on the ignitor or ballast.

## 6.3 Colour wheel

The SC-780 has one colour wheel with 12 color positions - 11 of these with dichroic colors and the last one open. The wheel can be positioned between two adjacent colors in any position. It is also possible to rotate the color wheel continuously at different speed „Rainbow effect".

## 6.4 Static gobo wheel

This wheel has 8 metal gobos + 2 dichroic gobo + 1 multicolor-dichro gobo + open position, metal gobos are interchangeable. Multicolor dichroic gobo (containing C,M,Y colors) is mixable with color wheel especially with cyan, magenta and yellow colours in order to obtain several different multicolor beams.

## 6.5 Rotating gobo wheel

1 metal gobo, 4 glass gobos and 1 dichroic gobo rotating in both dirrections, indexable, rotating gobo wheel cont. rotation slow to fast.

## 6.6 Iris

Motorized iris for different beam diameters

## 6.7 Effect wheel

This wheel has both hot and cold color temperature filters (3200 K and 5600 K). Total numbers of color combinations are 36. Also wash light and UV effect are provided by the special effect wheel.

## 6.8 3-facet rotating prism

3-facet prism rotating in both directions at different speed is situated at the special effect wheel.

## 6.9 Focus

Motorized focus enables the beam to be focused anywhere on stage.

## 6.10 Dimmer / Shutter / Strobe

Smooth 0 - 100 % dimming is provided by the combined mechanical dimmer / shutter unit. This unit may also be used for strobe effect (1 - 10 flashes per second)

## 6.11 Fan

The SC-780 is cooled by axial fan situated at the rear side of the lighting. The speed of the fan (of course the noice) can be continuously reduced if very quiet performance is required.
By the control board using the **"FAnS"** function you can choose 3 types of low fan speed operating:

### 1. "reG" - continuous controlling of the fan speed

the fan automatically raises its speed in order to control inside temperature of the lighting,
if the temperature inside increases about certain level (the low fan speed reduces the cooling of the lighting). This cycle can repeat several times until the temperature inside is on suitable level.

### 2. "Lo.HI"- low/high speed of the fan operating

the fan keeps the adjusted low speed until the temperature exceeds max. inside temp. of the fixture, then the SC-780 automatically switch from low to high the fan speed.

### 3. "Lo.OF" - low speed / Switch Off the lamp operating

the fan keeps the adjusted low speed until the temperature exceeds max. inside temp.. then the SC-780 automatically switch Off the lamp.

English

# 7. The SC-780 Control Board

The control board situated on the top side of the SC-780 offers several features. You can simply set the lighting address, read the number of lamp or unit hours, switch On and Off the lamp, run test show, make a reset and also use special functions for manual, demo and service purposes.
The main menu is accessed by pressing the [Mode] key - press this one so many times until the display shows message **"A001"** (with actually stored address). Browse through the menu by the pressing [Up] and [Down] keys - the display shows step by step these messages: **"A001, rPAn, rTilt, 16br, Lati, Poti, LAMP, tESt, rESE, SPEC"**. Press [Enter] if you wish to select one of them. The functions provided are described in the following sections and the function hierarchy is shown below.


## 7.1 Main functions

### A001 - DMX 512 Address settings:

The letter "A" flashes. Use the [Up] and [down] keys to select required address (001 - 496) and press [Enter] to confirm or [Mode] to cancel and return to the main menu.

### rPAn - Pan reverse:

This function allows you to invert the pan movement. Use the [Up] and [Down] keys to select **"On"** if you wish this feature or "Off" if you don't wish this feature and press [Enter] to confirm or [Mode] to cancel and return to the main menu.

### rtilt - Tilt reverse:

This function allows you to invert the tilt movement. Use the [Up] and [Down] keys to select **"On"** if you wish this feature or **"Off"** if you don't wish this feature and press [Enter] to confirm or [Mode] to cancel and return to the main menu.

### 16br - Movement resolution:

By this function you can adjust the desired movement resolution 8 or 16 bit. Use the [Up] and [Down] keys to select **"On"** if you wish the 16bit high resolution or **"Off"** if you wish only 8 bit resolution and press [Enter] to confirm or [Mode] to cancel and return to the main menu.
**Note:**
If you adjust the 16 bit resolution the fixture will occupy 16 DMX channels, if you adjust the 8 bit resolution, the fixture will be operated by only 14 DMX channels. Please, check the DMX protocol.

### LAti - Lamp On time:

This option enables you to read the total number of hours that the lamp has been powered On. Press [Enter] or [Mode] to return to the main menu. In order to reset the counter to 0, you have to hold the Up- and Down-button and press the Enter-button.

### Poti - Power On time:

By this option you can read the total number of hours that the SC-780 has been powered On. Press [Enter] or [Mode] to return to the main menu.

### LAMP - Switch On / Off the lamp:

Use the [Up] and [Down] keys to select **"On"** if you wish the switch On the lamp or **"Off"** if you wish switch Off the lamp and press [Enter] to confirm or [Mode] to cancel and return to the main menu.

### tESt - Test program:

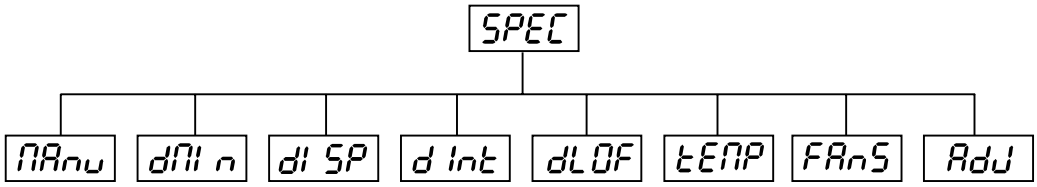
This function allows you to run a special test program without an external controller, which show you some possibilities of using SC-780. Press the [Enter] key to run the test program.

### rESE - Reset Function:

Press [Enter] key to run reset. This option enables the SC-780 to index all effects (functions) and return to their standard positions.

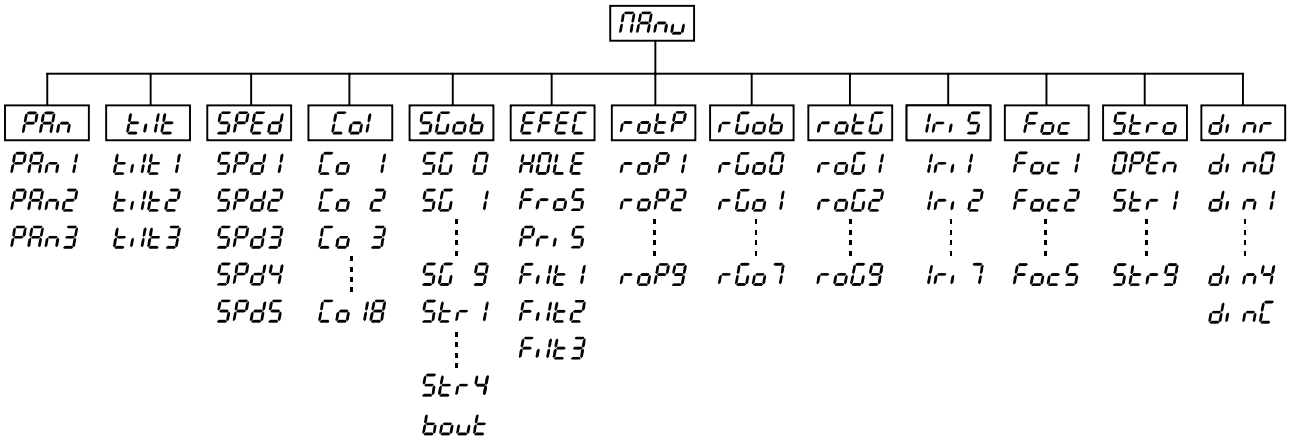
## 7.2 SPEC -Special functions:

Use the [Up] and [Down] keys to browse through the special functions and select the one by pressing [Enter].



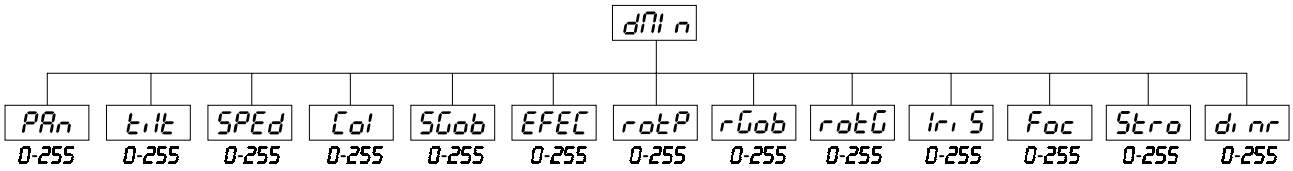

### MANU - Manual control of effects:

This function allows you to control manually the channel functions of the fixture. Use the [Up] and [Down] keys to select desired function and press [Enter] to adjust the effect or [Mode] to cancel and return to the menu.




### DMX - DMX values

Readout DMX values of each channel received by the fixture. Use the [Up] and [Down] keys to select desired channel and press [Enter] to read its value coming to the fixture or [Mode] to cancel and return to the menu.




### DISP - Automatic blackout of Display

This function allows you to keep the display On or to turn Off automatically 2 minutes after last pressing any key on the control board. Use the [Up] and [Down] keys to select **"On"** if you wish to keep the display On or **"Off"** if you wish to turn Off automatically 2 minutes after last pressing any key on the control board and press [Enter] to confirm or [Mode] to cancel and return to the menu.

### dINT - Display intensity

By this function you can adjust from 20 to 100 the intensity of the display. Use the [Up] and [Down] keys to select the level of the display intensity and press [Enter] to confirm or [Mode] to cancel and return to the menu.

### dLOF - Lamp Off via DMX

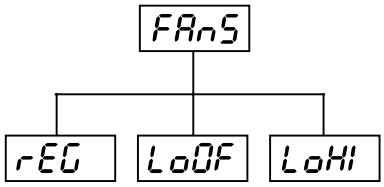
This function allows you to switch Off the lamp by DMX. Use the [Up] and [Down] keys to select **"On"** if you want to switch Off the lamp by DMX or **"Off"** if you don't want to switch Off the lamp by DMX and press [Enter] to confirm or [Mode] to cancel and return to the menu.

### tEMP - Temperature

Temperature readouts of fixture inside in Celsius. Inside temperatures below 70° C are not critical. 70° C and more lead to the lamp being switched off. Please note that the outside temperature should not exceed 55° C.

## FAnS - Low fan speed operating

By using this function you can choose 3 types of low fan speed operating. Browse through this menu by the pressing [Up] and [Down] keys - the display shows step by step these messages: **"reG, Lo.HI, Lo.OF"**. Press [Enter] if you wish to select one of them or [Mode] to cancel and return to the menu.




### rEG - continuous controlling of the fan speed

the fan automatically raises its speed in order to control inside temperature of the lighting, if the temperature inside increases about certain level (the low fan speed reduces the cooling of the lighting). This cycle can repeat several times until the temperature inside is on suitable level.

### LoHI - low/high speed of the fan operating

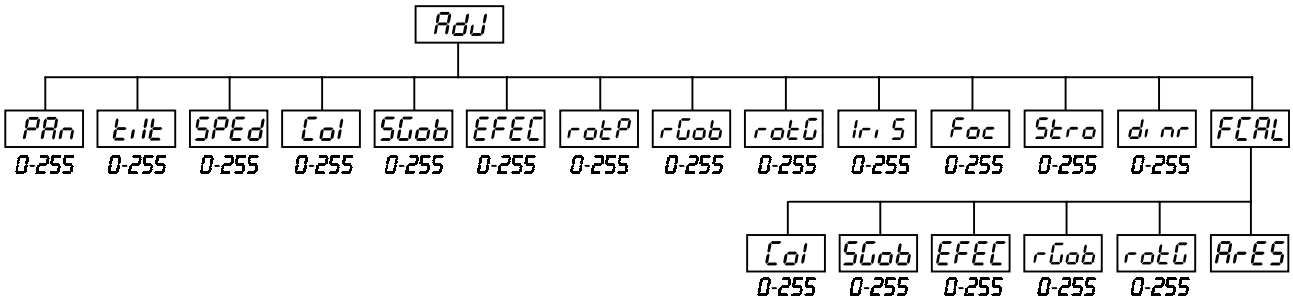
the fan keeps the adjusted low speed until the temperature exceeds max. inside temp..of the fixture, then the SC-780 automatically switch from low to high the fan speed.

### LoOF - low speed / Switch Off the lamp operating

the fan keeps the adjusted low speed until the temperature exceeds max. inside temp.. then the SC-780 automatically switch Off the lamp.

## AdJ - Adjusting the default positions of colour, gobo and effect wheels

By this function you can calibrate and adjust the colour, gobo and effect wheels to their standard/right positions. Use the [Up] and [Down] keys to browse through the adjusting menu - the display shows step by step these messages: **"PAn, Tilt, SPEd, Col, SGob, EFEC, rGob, rotG, IriS"** by which you can adjust the fixture to the required / desired position (0-255) before the function calibration. Then when the positioning is finished use the last **"FCAL"** function (Fixture calibration).




### 1. Calibration via the control board

Press [Enter] and on the display will apper by using [Up] and [Down] keys these messages: **"Col, SGob, EFEC, rGob, rotG"** for their very smooth function calibration. Select one of them press [Enter] and use the [Up] and [Down] keys in order to adjust their right value from 0-255 Then press [Enter] to confirm or [Mode] to cancel and return to the menu. This can be repeated for each calibration parametr if it is required. When the calibration works are finished it is necessary to use the **"ArES"** function in order to write the calibration values to the memory (EEPROM) and to make a reset in order to check the new adjusted positions of the colour, gobo and effect wheels. When the reset of the fixture is finished on the display will appear the **"FCAL"** message. Press [Enter] to repeat the calibration or [Mode] to return to the **"AdJ"** menu.

### 2. Calibration via the external controller

Press [Enter] and on the display will apper by using [Up] and [Down] keys these messages: **"Col, SGob, EFEC, rGob, rotG"** - calibration parameters. Select one of them and press [Enter].
Now you can calibrate the colour, gobo and effect wheel by your controller. The DMX calibration protocol is described in the table mentioned below.

**DMX Calibration protocol:**

| DMX Channel | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Function | COL. | SGOB. | EFEC. | RGOB | ROTG | - |
| | CALIBRATION 0 - 255 | CALIBRATION 0 - 255 | CALIBRATION 0 - 255 | CALIBRATION 0 - 255 | CALIBRATION 0 - 255 | - |
| | SMOOTH MICROSTEP MOVEMENT | | | | | |

| 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|
| COLOURS | GOBOS STROBO | EFFECT | PRISM ROTATION | ROTATING GOBOS | GOBO ROTATION | IRIS | FOCUS | STROBO | DIMMER |
| STANDARD PROTOCOL | STANDARD PROTOCOL | STANDARD PROTOCOL | STANDARD PROTOCOL | STANDARD PROTOCOL | STANDARD PROTOCOL | STANDARD PROTOCOL | STANDARD PROTOCOL | STANDARD PROTOCOL | STANDARD PROTOCOL |

After having calibrated required functions press [Enter] to confirm (or [Mode] to cancel and return to the menu without reset by the **"ArES"** function) and use the **"ArES"** function in order to write the calibration values to the memory (EEPROM) and to make a reset in order to check the new adjusted positions of the colour, gobo, effect and rot. gobo wheels and gobo indexing.

## 8. Error and Information messages

HEAt
This message appears if you try to switch On the lamp within 5 minutes after having switched it Off (the lamp is too hot). The message will come at the display if the lamp doesn´t ignite within 20 seconds. The SC-780 will store this information and automatically ignite the lamp when the 5 minutes period has expired.

LAEr
The ignition of the lamp is seven times unsuccessful (six times were appeared HEAt (message before), on the display will appear **"LAEr"**, meaning that the lamp could be damaged or even missed, the fixture is overheating (can be occured if the ambient temperature is 55° C or more) or there could be a failure on the ignitor or ballast. Please place or replace the lamp, check the ambient temperature or if the situation was not caused by the lamp please, contact your dealer.

nbEr
This messsage inform you that the main PCB does not communicate correctly with the control board.

CoEr
(color wheel error) This messsage will appear after the reset of the fixture if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepper motor is failed (or its driver circuit on the main PCB). The color wheel is not after the reset in the default position.

SGEr
(static gobo wheel error) This messsage will appear after the reset of the fixture if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepper motor is failed (or its driver circuit on the main PCB). The static gobo wheel is not after the reset in the default position.

rGEr
(rotating gobo wheel error) This messsage will appear after the reset of the fixture if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepper motor is failed (or its driver circuit on the main PCB). The rotating gobo wheel is not after the reset in the default position.

IGEr
(rotating gobo indexing error) This messsage will appear after the reset of the fixture if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepper motor is failed (or its driver circuit on the main PCB). The rotating gobo is not after the reset in the default position.

EFEr
(effect wheel error) This messsage will appear after the reset of the fixture if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepper motor is failed (or its driver circuit on the main PCB). The effect wheel is not after the reset in the default position.

FtEr
This error message inform you that the fixture was overheating (occured if the ambient temperature is 55°C or more) and that the relay switched Off the lamp. This message will shine on the display until the temperature will be on the suitable level, then on the display will appear the HEAt message meaning the lamp is too hot. (explanation see above).

SnEr
This message appears if the lamp lighting sensor is failed. Please, contact your dealer.

PoEr
This message will appear if the fixture was shortly disconnect from the main.

FrEr
It will appear if the frequency of the main is not standard 50 or 60Hz.

## 9. Technical Specifications

**Power supply:**

230 V/50 Hz

**Power consumption:**

800 W, Fuse: T5A

**Lamp:**

HMI 575

**Optical System**

- Double condensor lens with high efficiency parabolic mirror

**Colours**

- 11 interchangeable dichroic-filters plus white
- Colour-wheel with variable rotation speed

**Static gobos**

- 8 metal gobos plus full circle
- 1 Multicolor dichroic gobo, 2 dichroic gobos

**Rotating gobos**

- 1 metal gobo, 4 glass gobos and 1 dichroic gobo rotating in both dirrections at different speeds
- gobo indexing
- rotating gobo wheel cont. rotation

**Strobe**

- Strobe effect with variable speed (1 - 10 flashes per second)

**Dimmer**

Smooth dimmer from 0 - 100%

**Effects**

- Special effect wheel with frost filter, color temperature filters 3200 K and 5600 K, UV filter

**Prisma**

- 3 facet prism rotating in both dirrections at different speeds situated on effect wheel

**Iris**

Motorized iris for different beam diameters

**Focus**

Motorized focus from near to far

**Motor**

- 12 high quality stepper motors controlled by microprocessors

**Electronics**

- Digital serial input DMX-512
- 16 control-channels (full 16 bit protocol):

Channel 1: Horizontal mirror-movement 8 bit
Channel 2: Vertical mirror-movement 8 bit
Channel 3: Fine Horizontal mirror-movement 16 bit
Channel 4: Fine Vertical mirror-movement 16 bit
Channel 5: Pan/Tilt speed
Channel 6: Fan speed, On/Off lamp, reset
Channel 7: Colours

Channel 8: Shutter, Strobe, Gobos
Channel 9: Dimmer, Conversion filters, Frost, 3-facet prism
Channel 10: Prism rotation
Channel 11: Rotating gobos
Channel 12: Gobo rotation, gobo indexing
Channel 13: Iris
Channel 14: Focus
Channel 15: Shutter, strobe
Channel 16: Dimmer

**Housing**

- Easy access to lamp and main components thanks to large opening cover and the projector's modular construction.

**Dimensions:**

L x W x H: 670 x 240 x 210 mm

**Weight:**

28kg

## 10. Maintenance and cleaning

It is absolutely essential that the projector is kept clean and that dust, dirt and smoke-fluid residues must not build up on or within the projector. Otherwise, the projector's light-output will be significantly reduced. Regular cleaning will not only ensure the maximum light-output, but will also allow the projector to function reliably throughout its life.
A soft lint-free cloth moistened with any good glass cleaning fluid is recommended, under no circumstances should alcohol or solvents be used!


**DANGER !**
**Disconnect from the mains before starting any maintenance work**


The front mirror and objective lens will require weekly cleaning as smoke-fluid tends to building up residues, reducing the light-output very quickly. The cooling-fan should be cleaned monthly.

The gobos may be cleaned with a soft brush. The interior of the projector should be cleaned at least annually using a vacuum-cleaner or an air-jet.
The dichroic colour-filters, the gobo-wheel and the internal lenses should be cleaned monthly.

To ensure a proper function of the gobo-wheel, we recommend lubrication in six month intervals. The quantity of oil must not be excessive in order to avoid that oil runs out when the gobo-wheel rotates.

## 11. Appendix

We hope you will enjoy your SC-780. We can assure you that you will enjoy this device for years if you follow the instructions given in this manual.
Should you have further questions, do not hesitate to contact your local dealer.