





scoro A4S

broncolor

OPERATING INSTRUCTIONS | BRONCOLOR SCORO A2 | A4


Before use

We are pleased you have chosen a broncolor Scoro power pack which is a high-quality product in every respect. If used properly, it will render you many years of good service. Please read all the information contained in these operating instructions carefully. They contain important details on the use, safety and maintenance of the appliance. Keep these operating instructions in a safe place and pass them on to further users if necessary.

Observe the safety instructions.

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IMPORTANT SAFETY INSTRUCTIONS

broncolor flash light systems should be utilised exclusively for professional photo shootings by qualified personnel. Before starting up your flash light equipment carefully read all the information in your operating instructions. The safety instructions in the operating instructions must be strictly followed!

- > Read and understand all instructions before using!
- > Remove the transport protection and the packing material!
- > Close supervision is necessary when any appliance is used near children. Do not leave the flash light appliance unattended while in use!
- > Flash light contains, similar to sunlight, a specific portion of UV radiation! The undesirable side effects on skin and eyes are considerably reduced by using flash tubes or protecting glasses with UV safety measures! Nevertheless, taking pictures at close distances with unprotected skin and eyes should be avoided! Also avoid eye contact with the light source! The maximum daily UV radiation according to IEC 60335-2-27 / DIN 5031-10 is: 50 J/m². This value should not be exceeded!
- > With due allowance for heat radiation, the distance between the lamp and a person or between the lamp and inflammable or heat sensitive surfaces should be at a minimum distance of 1 m!
- > The power pack must be switched off to plug-in and to unplug! The lamp plugs and sockets have mechanical interlocks! When plugging in, ensure that those interlocks engage completely! To unplug, push down the locking spring below the cable guide and lift out the plug from the socket!
- > Prior to replacing flash tubes, halogen lamps, protecting glasses or fuses, disconnect the power pack and the lamp from the power supply! Prior to replacing the halogen lamp or the flash tube, the lamp should cool down for 10 min.!
- > broncolor flash light systems should only be equipped with original broncolor flash tubes, original broncolor combustible and packing material, original broncolor accessories, and also original broncolor spare parts!
- > broncolor power packs, lamps and accessories meet an extremely high safety standard! When connecting broncolor lamps to power packs of other brands or broncolor power packs to lamp bases or accessories of other brands, integrated safety measures may become ineffective! Due to different design features and contact assignment of the lamp plugs of other brands, the user himself/herself may even be at risk. We offer no guarantee and accept no liability for damages which may be caused by this type of usage!
- > Only lamps which are approved for operation with this power pack should be utilised!
- > Only earthed extension cables which are approved for operation with the corresponding lamp should be utilised!
- > To avoid the risk of fire, electric shock or injury to persons utilise exclusively the accessory recommended by the manufacturer!
- > Check that the mains voltage corresponds to the information on the type plate of the unit!
- > The flash light equipment is designed for use in dry conditions and in an ambient temperature from 0°C to 35°C! The flash light equipment has to be protected from wetness, condensation, from dripping and splash water, humidity, dirt, sand, metal chips and exposure to dust!

- > Protect the flash light equipment from electromagnetic fields, shock and vibration!
- > Protect the flash light equipment from heat and frost! If the power pack freezes continuous loss of power output and serious technical damage can result!
- > Sudden temperature differences can cause condensation water in the unit! In such situations the equipment must stay for 1 hour in a well ventilated place to acclimatise to the new temperature before start up!
- > Do not operate the units in an environment where there is a risk of explosion!
- > The power pack should not be operated in or near water! Attention: high voltage!
- > The power pack and the lamps should not be immersed in water or other liquids! It could cause an electric shock!
- > Remove the transport protection cap on the front side of the lamp before connecting it to the power pack!
- > For safety reasons, never operate the lamp base without the protecting glass in place! UV-coated protecting glasses or UV-coated flash tubes must be utilised as a protection against UV radiation for eyes and skin!
- > Before operation the lamp has to be fastened on a stand or a suspension device! The lamp must be locked by tightening the mounting screw!
- > Only sand-filled fuses of the type indicated on the safety type plate may be used! Sand-filled fuses can be identified by their opaque fuse body! With incorrect fuse protection the halogen lamp may burst!
- > Filters or diffusers should not be fastened directly on the flash tube, halogen modelling lamp or protecting glass!
- > Do not operate appliance with a damaged earthed cable. Cables which are damaged or twisted must be replaced!
- > The unit must only be connected to an earthed socket, or an emergency power generator!
- > If an extension cable is necessary, a cable with a current rating at least equal to that of the appliance should be used. Cables rated for less amperage than the appliance may overheat. When using a cable reel, it must be completely unrolled before use to prevent overheating of the cable!
- > The unit is suitable for operation with a motor generator provided that the voltage lies within all the load conditions (including capacitive load) and within the tolerance limit of 200-264 V or 95-135 V! From experience this means that only electronic stabilised motor generators are to be utilised! When operating on unstabilised motor generators, voltage peaks of 300 V and more have been observed! This can lead to damages for which we assume no liability!
- > Do not operate the lamps inside a bag or a box!
- > The ventilation slots on the unit or on the lamp should not be covered!
- > Pay attention when laying, clearing away or rolling up cables that they do not contact hot surfaces or parts of lamps and that they will not be tripped over by persons!

IMPORTANT SAFETY INSTRUCTIONS

- > Do not touch the connection socket for mains cable and lamp outlets on the power pack and do not poke in them with metal objects!
- > Flash tubes, halogen modelling lamps and protecting glasses heat up to a high operating temperature, this also applies to the front side of the lamps! Therefore the attachments also assume high temperatures! Handle with care! Contact with hot components can cause injuries!
- > Do not come into contact with glass or metal whilst operating the flash light system!
- > Let the unit and its connected lamp base cool completely after use and before packing!
- > Always unplug appliance from electrical socket before cleaning and servicing and when not in use! Never jerk cable to pull the plug from the socket. Grasp plug and pull to disconnect!
- > Dropped or damaged units or lamps must be checked by a specialist before reconnection!
- > To reduce the risk of electric shock, never open the power pack or lamps! Dangerous voltages could still remain inside the unit even after it has been disconnected from the mains supply. Therefore, take the unit to an authorised broncolor service station when service or repair work is required. Incorrect reassembly can cause electric shock, even when the unit is closed.

Shipping instructions Scoro A2 / A2S / A4 / A4S:

- > Use original broncolor packing for the transport of the power pack!

Shipping instructions lamps:

- > Use original broncolor packing for the transport of the lamps. Before shipping flash tubes, halogen lamp and protection glass pack them with our protective packing material (foam plastic and transport cap). If the protective packaging is incomplete, remove flash tube, halogen lamp and protection glass from the lamp and send them separately!

1. APPLICATION SCORO

We are pleased that you have chosen a "Scoro" power pack which is a high-quality state-of-the-art product in every respect. If used properly, it will render you many years of good service.

This mains (AC-line) supplied studio flash unit is designed for professional photography. For your safety use a three-wire extension cable when possible.

2. START UP

2.1 Mains voltage

As a standard feature, all the Scoro power packs are supplied as multi-voltage units.

They automatically adapt to the respective mains voltage.

Scoro power packs A2S and A4S deliver for all operating voltages (85-240 V) constant 1600 J or 3200 J.

Scoro power packs A2 and A4 (230V) can also be operated on 100 V or 120 V.

However, the following limitations apply for 100 V – 120 V:

- > 800 J are available instead of 1600 J (Scoro A2).
- > 1600 J are available instead of 3200 J (Scoro A4).

Furthermore, stroboscopic and speed mode are not possible.

It is not possible to influence the flash duration and colour temperature.



Attention: Ensure that the operating voltage of the modelling lamp corresponds to the local mains supply (max. 650 W on 200-240 V or 300 W on 100-120V).

2.2 Earthed mains (AC-line)

Whenever possible, connect unit to current supply always using an earthed mains plug.

2.3 Start up

Use the mains (AC-line) switch (1) to power up the unit. During the charging process, the digital master power display (12) flashes, after which, it becomes continuous (see section 12, "Lamp compatibility").

3. LCD DISPLAY AND MENU SYSTEM

The LCD display presents an absolute innovation. It has never been so easy to activate that many settings with so few keys. The display is a significant tool, and therefore it is important that, firstly, you become well acquainted with the structure of the menu system.



The brightness of the user interface can be automatically or manually dimmed dependent on the ambient light. See LCD setting function "Brightness display" (section 14.20).

3.1 LCD display menu system

Directly after switching on the unit a start display appears for approximately 5 s with information about the unit and the owner. Afterwards the unit changes automatically to the normal operating mode. By default, the flash duration (t 01) is shown permanently. In addition, depending on whether the flash duration or the colour temperature have been altered, the display will adjust and the current value will be indicated.

When delay (dly), sequence (seq), interval (int), alternate (alt) are activated as well as the studio and unit address (if desired), the corresponding functions will be shown on the main page. The functions shown in the display give an overview of the most important activated additional functions of the power pack.

The main menu is called up with the key "menu" [22]. At the same time, at the bottom edge of the display, a user guide appears, showing the selection keys [21 & 22] each with their supplementary functions ["▼/▲", "+/-", "select", "cancel", "quit", "help"]. To return to normal mode, press the key "menu" [22]. Each set value is displayed in a box at the top of the LCD.

The desired unit functions are selected with the keys "▼/▲" and confirmed with the key "select". The selected function is visually highlighted with a bar.

After selecting the desired function, one reaches the second level. There, the options are visible within the chosen function, which can then be selected with the keys "▼/▲", or "-/+". The previously stored setting is always indicated in a box at the top line. The function on which the cursor is currently positioned is marked with a bar. **The new setting will only be set after the "select" key has been pressed again.** The key "quit" or menu [22] leads back to the respective higher level. Therefore, it is also possible to quit the submenu without storing a new setting.



3.2 Auxiliary function

The key "help" activates an info-text for the respective setting. A practical short description of the addressed functions is stored there. To return to the main menu press the key "menu" [22].



4. ENERGY CONTROL

4.1 Scoro A2 | A2S

Use the "▼/▲" keys (9.1,9.2,9.3) to control the flash energy (flash intensity) on each individual outlet (1, 2 & 3) within a range of 9 f-stops. The entire energy, however, cannot exceed 1600 J. A value of 10 in the digital master power display (12) indicates maximum intensity, 1.0 minimum intensity (3 joules).

Whole numbers are full f-stops, decimals indicate 1/10 of a whole f-stop. Brief pressure on the keys "▼/▲" (9.1, 9.2, 9.3, 10) runs the power up (or down) by a 1/10 f-stop level, prolonged pressure by a full f-stop. The digital display (12) then blinks until charging or discharging has reached the newly selected level and the "test" key light (16) goes out. An acoustic signal announces that the new energy level has been achieved.

4.2 Scoro A4 | A4S

Use the "▼/▲" keys (9.1,9.2,9.3) to control the flash energy (flash intensity) on each individual outlet (1, 2 & 3) within a range of 9.9 f-stops. The entire energy, however, cannot exceed 3200 J. A value of 10 in the digital master power display (12) indicates maximum intensity, 0.1 minimum intensity (3 joules).

Whole numbers are full f-stops, decimals indicate 1/10 of a whole f-stop. Brief pressure on the keys "▼/▲" (9.1, 9.2, 9.3, 10) runs the power up (or down) by a 1/10 f-stop level, prolonged pressure by a full f-stop. The digital display (12) then blinks until charging or discharging has reached the newly selected level and the "test" key light (16) goes out. An acoustic sound announces that the new energy level has been achieved.



4.3 Individual energy distribution (asymmetry) & flash cut-off

Scoro power packs incorporate an electronic flash cut-off system for all 3 channels. The units have three individual lamp outlets which can be controlled, with neutral colour (Enhanced Colour Temperature Control) over the whole range, and with asymmetry up to 6 f-stop intervals and independently of each other. The unit allows power selection in 1/10 and whole f-stop intervals.

4.4 Colour temperature control / Asymmetry (in case flash duration t 0.1 is optimal)

All Scoro units are equipped with an enhanced ECTC-process which ensures that no colour temperature shifts or double exposure can occur during individual power distribution. On partial power, the colour temperature of the set energy can be influenced by relative shifts in intervals of 200 K upwards or downwards (see section 14.5, "Colour temperature"). The control range of the colour temperature adjustment is increased when on reduced power.

Due to the direct dependence of colour temperature and flash duration, t 0.1 is automatically adjusted.

5. LAMP OUTLETS

The lamp outlets of the Scoro units are marked with the numerals 1 – 3. Lamp plugs and sockets have a mechanical locking device to prevent them from accidentally coming loose. When plugging in, ensure that the front part of the plug is inserted first, and that the rear locking device locks completely into place. To release, press down the locking device spring under the cable guide and lift out the plug from the socket. The power pack must be switched off whilst plugging in and unplugging.



Each outlet may be switched individually (7.1, 7.2, 7.3). The digital power distribution displays (11) indicate the set energy of each individual lamp. The digital master power display (12) indicates the total energy control range of all the connected or activated lamps.

It is unnecessary to disconnect a lamp when not in use, simply deactivate it by using the lamp outlet on/off switch. Energy can be asymmetrically allocated to the individual lamps until the maximum energy has been achieved. If an additional lamp is connected, and should the other lamps already be using the maximum energy, no more energy can be allocated to the newly connected lamp. By reducing the already set total energy, additional energy can be allocated to a further lamp.

5. LAMP OUTLETS

5.1 Meaning of the digital displays (11)

Example with lamp energy "8.7":

- > **"8.7" blinks** flash monitor has detected a misfire
- > **"—"** lamp connected but switched off
- > **" "** no lamp connected
- > **"-0"** no energy allocation possible
(the entire energy has already been used up by other lamps)

6. MODELLING LIGHT

The "mod" key (15) switches on the modelling lamp for all connected lamps. When switched on, the blue LED next to the "mod" key lights up. The lamps have also an additional modelling lamp switch. Furthermore, it is possible to operate the modelling light proportionally (section 6.1) and adapt it to the various maximum outputs of broncolor power packs.

Pressing the "mod" key (15) (for 1 s) when the modelling lamp is on, will give direct access to the "full" mode. To return to the previous mode briefly press "mod" again.



Attention: Please ensure that the modelling lamp voltage corresponds with the local mains (AC-line) voltage.

6.1 Proportionality

The modelling light brightness can be set proportionally to the flash intensity.

Stages prop1, prop2, prop3, prop4 and prop5 are used to adapt the modelling light brightness of power packs with different output. The setting "modelling light proportional" duly allows for the output set, the number of lamps as well as a possible asymmetrical energy distribution of the Scoro power packs.

Proportionality is guaranteed if the identical operating mode has been set for all power packs. The higher the digit, the brighter the modelling light.

The following operating modes are possible:

- "propmax"** When working with only a single power pack (in asymmetrical operation); using the setting "propmax", the modelling light of the lamp with the highest flash energy operates at full output, and the other lamps will be proportionally dimmed, in accordance with their power settings.
- "full"** All lamps with full modelling light, independent of flash output, type of power pack and output distribution.
- "low"** Lighting level reduced for all lamps to reduce power consumption and extend the service life of the halogen lamps.
- "prop1-prop5"** These levels allow adapting the Scoro units to the proportionality of other broncolor power packs.
- Note:** If a power pack is used with less power, it is known that the halogen modelling light is relatively weak and yellowish. To solve this problem, all broncolor power packs may be operated with higher modelling light proportionality.



Attention: The Scoro software automatically indicates in the LCD selection text the possible proportionality levels, and warns of sudden altered power settings made by the user. **Important:** The modelling lights of all the connected lamps are proportional when all the power packs (independent of their output) have the same proportionality level. This only applies when all the modelling lights have the same wattage.

6.2 Reduced modelling light

To avoid overloading the mains supply (AC-line), the 100 - 120 V versions of the power packs reduce the modelling light intensity during charging. You can clear this factory-installed feature if the power rating of the mains supply (AC-line) is sufficient - see setting possibilities of the dimmer in section 14.11. When working on poor-quality mains supplies (AC-line) you can also slow down the charging rate with the additional function "charge time" - this reduces the risk of blowing the supply fuses (section 14.10)."

During fast charging of Scoro A2S and A4S, the modelling light is dimmed, with the exception of the lamp with the highest power, to avoid overloading the mains supply, even when no reduction / dimmer was set (section 14.11).

6.3 Modelling light switch on lamp

The switch on the lamp is used to switch the modelling light on and off. To avoid damage to the lamp filament, always switch off the modelling light before moving the lamp.

7. RELEASE

7.1 RFS (2) Interface (Radio Frequency System)

As a standard feature, Scoro power packs are supplied with a builtin RFS system (optional RFS 2). The antenna is not visible as it is integrated into the handle. RFS (2) can be switched on or off with the key "ir/rf" (14). A flash release is activated via RFS (2) and IR by default. The definition of the IR/RFS key is entered in the LCD display under the position "Flash control" (section 14.12). The following settings are possible: IR/-, -/RFS, IR/RFS. Switching off the RFS (2), simultaneously deactivates all the RFS (2) functions from the camera transmitter. However, the computer connection with RFS (2) is maintained.

For flash triggering via RFS (2), the channel (studio address) must correspond with the channel of the RFS (2) transmitter. The definition of the channel (studio address) is entered in the LCD display under the position "studio address" (section 14.14). If the power pack is triggered via RFS (2), flash triggering follows with a minimal time delay of approximately 0.8 (0.4) msec.

If RFS (2) is used only for flash triggering (but not for remote control), the unit address is irrelevant.

7.2 Flash triggering via infrared receiver (ir)

The IR receiver can be switched on or off with the key "ir/rf" (14). If the function is activated, the blue LED next to the key lights up. A flash release is activated via RFS and IR by default. The definition of the IR/RF key is entered in the LCD display under "Flash control" (section 14.12). The following settings are possible: IR/-, -/RFS, IR/RFS.

Scoro power packs may be triggered by broncolor infrared transmitters. If the power pack is triggered via infrared, the flash release follows with a minimal time delay of approximately 0.8 msec.

7.3 Photocell (cell)

The photocell can be switched on or off using the "cell" key (13). If it is activated, the blue LED next to the key lights up. After the first flash of a sequence, the active photocell will be deactivated and the blue info-LED next to the "cell" key (13) blinks. By pressing the "cell" key it is reactivated.

7.4 Sync socket

The synchronous cables art. no. 34.111.00 and 34.112.00 may be plugged into the sync socket (4) to trigger flashes via cable.

7.5 "test" key

This key (16) allows manual release of the power pack. Flash release is possible as soon as 70 % of the set energy is available.

The visual ready signal (16) however, lights up only when 100 % is available.

7.6 Servor

All broncolor infrared remote controls (servor) can cause inadvertent flash triggering. In this case, switch off the "IR" function (see section 14.12).

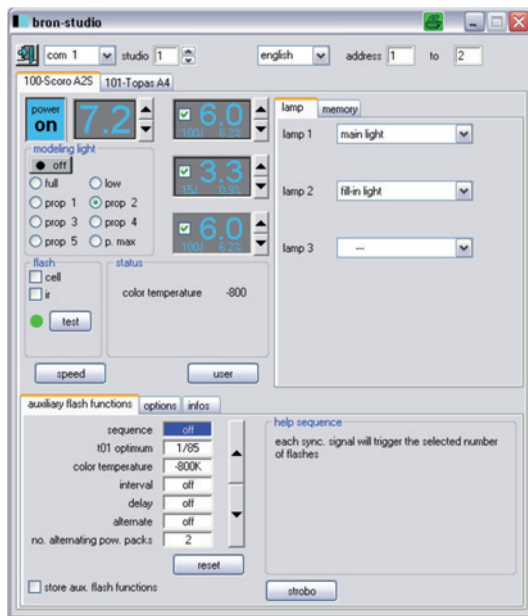
8. REMOTE CONTROL

The remote control system has 20 channels (studio addresses) with up to 20 unit addresses per channel. The channels assign each an independent workstation. Each flash unit within a workstation is identifiable by its own unit address. Every other workstation can each operate up to 20 flash units. Therefore, flash units of multiple workstations are clearly identifiable. A PC or Macintosh computer, or an RFS transmitter can control all the flash units of a studio workstation (channel / studio address).

8.1 Computer connection with RFS (Radio Frequency System)

All Scoro A power packs have a built in interface which allows remote control or flash triggering of the power pack via radio from RFS transmitter, as well as RFS transceiver from PC or Macintosh computer. Therefore all the Scoro power pack functions can be comfortably controlled from a digital workstation (see diagram).

PC / Macintosh screen display



8.2 Remote control channels (RFS studio address)

Remote control by means of RFS may be performed via separate channels (studio workstations). These can be set in the LCD menu under "studio address" (see section 14.14). All flash units within a studio workstation must have the same channel number (studio address).

8.3 RFS unit addresses

Unit addresses will be assigned to each power pack for individual control. (See LCD menu "unit address", section 14.15).

8. REMOTE CONTROL

8.4 Computer connection with cable

Scoro units are equipped with a computer connection socket (3). This allows operation of the power pack from the computer via cable. Each channel can control up to 20 units. Hence, Scoro power packs can be remotely controlled by cable with the Bron studio software.

9. DISPLAYS VISUAL | AUDIBLE

9.1 The visual ready signal

This is the blue LED at the "test" key or ready display (16). It lights up only when the unit is fully charged or discharged. After triggering a flash, this LED goes out, and lights up again when the unit is fully charged once more.

The visual ready signal is easy to read even from larger distances. The brightness (dark / bright) can be altered by the user (see LCD menu "Brightness test" section 14.17).



9.2 The audible ready signal

An acoustic signal (beep) sounds when the power capacitors are 100 % charged, or discharged. The signal may be switched on or off, and the volume may be regulated. The corresponding setting options are explained in LCD menu "Audio ready signal" (section 14.18).

When Scoro power packs are assigned an individual address, the acoustic signal can be programmed with an individual acoustic (beep) tone.

9.3 Visual fault signal

In case of a technical fault or activation of the flash monitoring, the test release key/ready signal (16) lights up red. Should the lamp plug not be correctly engaged, this will be indicated by the red test release key and the blinking digital display of the corresponding channel (11).

At the end of their service lives, flash tubes often misfire. This fault is indicated by the test release key of the Scoro power packs that lights up red. Additionally, the digital display (11) of the channel to which the lamp concerned is connected, blinks.



Attention:

Check to see if the flash tube is in working order, and change if necessary.

The blinking digital display of the channel concerned can be deactivated by pressing the key "lamp connection on/off" (7.1, 7.2, 7.3).

If the fault indication is not caused by the lamp, the power pack must be switched off and on again. Should the test release key remain red, please contact a broncolor service station.

9.4 Audible fault signal

When the flash discharge fails, a warning signal (two-sound tone) of approx. 0.5 s duration will sound and the display [11] of the relevant lamp will flash.

9.5 Audible messages

Clicking tone:

- Key sound (setting of volume is explained in section 14.19).

"Beep" tone:

- End of charging or discharging (setting of volume is explained in section 14.18).

"Double-beep" tone:

- Energy limit top or bottom when controlling energy via RFS [2] transmitter.
- Reset key pressed for 2 s (resetting of additional functions).
- Reset key pressed for 10 s (reset to factory settings).

"Two-sound" tone:

- Technical fault. Ready signal [16] lights red.
- Flash monitoring. The display of the lamp which has not fired lights up.
- Beginning and end of a thermal blocking procedure. Display in LCD.
- A suggestion appears on the LCD when setting changes are not possible with the previous specifications.

10. SPECIAL FUNCTIONS

10.1 Speed key

Flash duration t 0.1 and charge time are reduced by pressing the speed key [17]. Therefore, Scoro power packs are optimised for the shooting of moving objects and / or fast image sequences. As soon as the speed key is activated, the corresponding LED lights blue and the maximum flash energy of A2 models is reduced from 1600 J to 1200 J, and the energy of A4 models is reduced from 3200 J to 2400 J. In speed operation, the colour temperature is fractionally colder, however, consistent over the energy adjustment range.



The display of the maximum output [12] can be adjusted with the function "max. display" (see section 14.22).

10. SPECIAL FUNCTIONS

10.2 User key

When the user key (18) is "on" it activates the initial settings of a further operator. With this, Scoro A power packs can be individually configured for two users in which all the relevant functions and settings are separately stored, thus providing independent preference capabilities for multiple users.

Those functions, which are stored in standard or user mode, are shown in the two columns "mem" (memory) and "Standard/User" in chapter 14.

10.3 Memory functions

In standard and user mode, there are each four own memories available. All the unit settings can be stored therein (see LCD function "memory 1-4" section 14.21). Selecting one of the four memories redirects to an information window in the LCD, in which the most important data of the corresponding memory are indicated. Pressing the "recall" key reinitializes the data in the memory. Pressing the "store" key overwrites the memory contents with the latest unit settings.



Those functions, which are stored in standard or user mode, are shown in the two columns "mem" (memory) and "Standard/User" in chapter 14.

10.4 Reset key

- > Brief pressure on the reset key (19) advances the cursor directly to the main page. When pressing the menu key (22) the cursor returns to the beginning of the main menu.
- > Pressing this key for approximately 2 s resets the flash additional functions (see section 14.9). This is confirmed by a double-beep tone.
- > Pressing this key for approximately 10 s resets all the functions to the factory settings. This is confirmed by a double-beep tone.

10.5 Alternate release

This function enables to realise even faster shooting sequences. Alternate release also enables shorter sequences, four times faster, even with higher energy (see LCD function "Alternate" section 14.8). With the same function it is possible to reduce the interval of stroboscopic sequences down to a minimum of 0.01 s (see section 14.6)

11. PROTECTIVE FACILITIES

11.1 Cooling

The cooling fan switches to a higher speed for a certain time after a few flashes.

11.2 Thermal overheating display

To protect against overheating after extended flash series, the unit will automatically switch off. At that stage, the following message will appear on the LCD display: "alarm: thermo" and the approximate time required for cooling. The cooling time is shortened if the unit remains connected and switched on.

11.3 Circuit breaker

In the event of an electrical malfunction, the circuit breaker (2) will automatically disconnect the power pack from the power source. The unit can be restarted by pressing the circuit breaker button. If it disconnects again immediately the power pack must be serviced by an authorised service station.

12. LAMP COMPATIBILITY

All broncolor lamps are electrically compatible with the Scoro A power packs. The most popular lamps, such as the Pulso and Unilite range, as well as Ringflash (C & P) may be used with the Scoro A power packs without any limitations.

Particularly for the small lamps, there are thermal limitations which must be taken into consideration when using them with the Scoro A power pack (see corresponding max J / min specifications on the lamps).

13. SERVICE | REPAIR

Your broncolor power pack is a precision device which will work for many years without malfunction if you take proper care of it. If nevertheless malfunctions do arise, please do not attempt to open the unit to repair it yourself. Even when the unit is switched off, dangerous voltages may remain within the interior of the device. Therefore, always let our broncolor service station carry out repairs or service work.

14. ADDITIONAL FUNCTIONS & LISTING IN LCD MAIN MENU

Section	Function	Description of function
14.1	Lamp outlets1-3	Display of the activated lamp outlets in joules or percentage.
14.2	Modelling light	Choice of the modelling light level. See section 6.1.
14.3	Sequence (seq)	Allows to define a flash series or the pre-selection of a defined number of flashes to be triggered together with the shortest possible intervals; provided that the "interval" function is not activated. After the flash series has been triggered, the photocell becomes deactivated. To prevent overheating after extended flash series (to protect the flash tubes), the unit will automatically shut off.
14.4	t 0.1 (flash duration)	Choice of flash duration t 0.1. The setting range is dependent on the selected power.
14.5	Colour temperature	Selection of colour temperature adjustment with simultaneous display of flash duration (see 14.4), on the main page. The setting range is dependent on the selected power.
14.6	Interval (int)	Allows to define the time between each flash. By briefly pressing the +/- key, the setting is effected in 0.01 s steps. Prolonged pressure alters the values in 0.1 - 2 s steps. 50 s are the maximum for intervals.
14.7	Delay (dly)	Delay triggering, this can be delayed in the range of 0.01s – 50.00 s.
14.8	Alternate (alt)	"ping-pong release" of up to 4 power packs. Here, using up to 4 power packs, you can determine the triggering sequence of these power packs i.e. only one power pack is triggered per flash trigger signal while the others are waiting, or are being recharged. This function realises even faster flash sequences.
14.9	Aux. backup	Auxiliary backup stores additional functions (sequence, flash duration t 0.1, colour temperature, interval, delay and alternate) when switching off or in case of a power grid cut.
14.10	Charge time	Choice of charging time slow / fast. "Slow" for longer charging times as option for weak power grids and motor generators.

PART 1

Selection possibility	Default value	Mem	Standard User
> joules ("J") > percentage ("%")	J	✓	✓
> propmax > full > low > prop1 – prop5	prop3 for Scoro A2 / A2S prop2 for Scoro A4 / A4S	✓	✓
> off > +/- (number of flashes per series)	off	✓	✓
A2 / A2S: 1/150 – 1/8000 s A4 / A4S: 1/150 – 1/8000 s	t 0.1 / optimal color temp.	✓	✓
> 400 K up to + 800 K	optimal color temp.	✓	✓
> off > +/- (time between two flashes per series)	off	✓	✓
> off > +/- (time between trigger signal and first flash)	off	✓	✓
> number of units (2-4) > sequence [off, active, waiting 1-3]	2 off	✓	✓
on / off	off		✓
> slow > fast	slow	✓	✓

14. ADDITIONAL FUNCTIONS & LISTING IN LCD MAIN MENU

Section	Function	Description of function
14.11	Dimmer	The modelling light is reduced (dimmed) during charging. This option provides protection in case of overloaded power grids or as a visual flash control.
14.12	Flash control	Selection of flash release: Radio and/or infrared.
14.13	Cell sensitivity	Selection of photocell sensitivity.
14.14	Studio address	To determine studio address or RFS channel. The same channel can be set at the bottom of the RFS transmitter and in the RFS software.
14.15	Unit address	To determine the unit address / number. Different unit addresses are possible for each studio address. With remote control by means of RFS-software each unit must have a different address.
14.16	Studio display	Studio and unit addresses can be displayed on the main page of the LCD display.
14.17	Brightness test	Brightness of the test key and visual ready display can be altered.
14.18	Audio ready signal	An acoustic ready signal sounds when the power capacitors are 100 % charged. The volume of the signal can be defined. With "standard" mode, each unit has the same signal. With "address" mode, the acoustic signal adapts itself to the unit number.
14.19	Volume key sound	Setting of volume of acoustic tone when pressing the keys. 4 different settings are available.
14.20	Brightness display	The brightness intensity of all backlighting LEDs and LCD displays can be varied. 3 pre-defined settings are available and a variable function for automatic adjustment to the ambient light.

PART 2

Selection possibility	Default value	Mem	Standard User
on / off	> on (100 - 120 V) > off (200 - 240 V)	√	√
> IR/RFS (infrared & radio) > IR/-- (infrared only) > --/RFS (radio only)	IR/RFS		√
> low > high	high		√
1 – 20	1		√
1 – 20	1		√
> on > off	off		√
> dark > bright	bright		√
> volume: (off, low, medium, high) > mode (standard, address)	> "standard" mode > medium volume		√
> off > quiet > medium > loud	quiet		√
> high > medium > low > auto	auto		√

14. ADDITIONAL FUNCTIONS & LISTING IN LCD MAIN MENU

Section	Function	Description of function
14.21	Memory 1-4	Stores and recalls the set unit functions. The marked positions are stored in the "Mem" column.
14.22	Max. display	Standardization of f-stop display of Scoro A2 and A2S whilst operating with power packs of different output levels. As max. power Scoro A2 or A2S indicate number 9. Further in "speed mode", the power reduction can be calculated with the power display, this means 9.6 for 2400 J for Scoro A4, or A4S and 9.6, or 8.6 for Scoro A2, or A2S, respectively.
14.23	Flash sequence	Fixed strobo-setting with the fastest possible flash sequence. This concerns all connected lamps.
14.24	Daily counter	Counts the number of flashes triggered since last reset of daily counter. A brief pressure on the "reset" key sets the counter back to 0.
14.25	Flash counter	Counts the number of flashes triggered over the entire lifespan of the unit. It cannot be reset.
14.26	Serial number	Individual serial number of the unit. Keep available in case of servicing / repair.
14.27	Program version	Current program version. Can be updated by our service department.
14.28	Country	Static country code for specific service data.
14.29	Delivery date	Distributors delivery date.
14.30	Language	To simplify operation, you can choose between various languages. In numeric English the figures of the functions correspond to the LCD menu of the sub-sections of section 11. For example: "23 flash sequence" corresponds to the LCD menu from section 14.23 of the operating instructions

PART 3

Selection possibility	Default value	Mem	Standard	User
Each with store or recall	Last saved data		√	
> maximum output level 9.0 or 10 (Scoro A2 & A2S) > speed max. 9.6 or 10 (Scoro A4 & A4S), or. 8.6 or 9.0 (Scoro A2 & A2S) on max. output level	10 9.6		√	
> on > cancel	off			
> reset	Number of flashes since last reset of daily counter			
none	Number of flashes triggered since delivery ex factory			
none	Serial number			
> Scoro > charge	Program versions			
none	Country code			
none	Date (mm/yy)			
> English > German > Spanish > French > Italian > Swedish > Chinese > Japanese > Korean > Indonesien > Numerical / English	English or distributor setting		√	

15. TECHNICAL DATA



		Scoro A2*	Scoro A2S
Flash energy		1600 J	1600 J
F-stop at distance of 2 m (6 ½ ft.) 100 ISO, reflector P70		64 2/10	64 2/10
Flash duration t 0.1 on max. energy		1/265 s	1/265 s
Variation range of flash duration t 0.1		1/150 - 1/8000 s	1/150 - 1/8000 s
Variation range of flash duration t 0.5		1/450-1/12000 s	1/450-1/12000 s
Flash duration and energy automatically regulated for optimum colour temperature. Minimum flash duration can be preselected.			
Charging time (min.- max. energy)	230 V	0.03-1.1 s	0.02-0.6 s
	120 V	0.03-1.5 s	0.02-1.0 s
	100 V	0.03-2.5 s	0.02-1.1 s
Can be switched to slow charging mode			
Flash energy speed mode		1200 J	1200 J
F-stop at distance of 2 m (6 ½ ft.) 100 ISO, reflector P70 speed mode		45 9/10	45 9/10
Flash duration t 0.1 on max. energy		1/535 s	1/535 s
Variation range of flash duration t 0.1		1/150 - 1/8000 s	1/150 - 1/8000 s
Flash duration and energy automatically regulated for optimum colour temperature. Minimum flash duration can be preselected.			
Charging time speed modus (min.- max. energy)	230 V	0.03-0.7 s	0.02-0.4 s
	120 V	-	0.02-0.6 s
	100 V	-	0.02-0.7 s
Ready display		Visual and audible (can be switched off), signals when 100 % of selected energy is reached	
Lamp outlets		3 main connectors with flash cut-off and ECTC	
Power output distribution		Symmetrical and individually asymmetrical	

*A2: operation 100 V- 120 V each with max. 9.0 f-stops, no strobo and no speed mode



		Scoro A4*	Scoro A4S
Flash energy		3200 J	3200 J
F-stop at distance of 2 m (6 ½ ft.) 100 ISO, reflector P70		90 2/10	90 2/10
Flash duration t 0.1 on max. energy		1/132 s	1/132 s
Variation range of flash duration t 0.1		1/85 - 1/8000 s	1/85 - 1/8000 s
Variation range of flash duration t 0.5		1/240-1/12000 s	1/240-1/12000 s
		Flash duration and energy automatically regulated for optimum colour temperature. Minimum flash duration can be preselected.	
Charging time	230 V	0.03-2.2 s	0.02-1.3s
(min.- max. energy)	120 V	0.03-3.0 s	0.02-2.0 s
	100 V	0.03-5.0 s	0.02-2.2 s
		Can be switched to slow charging mode	
Flash energy speed mode		2400 J	2400 J
F-stop at distance of 2 m (6 ½ ft.) 100 ISO, reflector P70 speed mode		64 9/10	64 9/10
Flash duration t 0.1 on max. energy		1/285 s	1/285 s
Variation range of flash duration t 0.1		1/85 - 1/8000 s	1/85 - 1/8000 s
		Flash duration and energy automatically regulated for optimum colour temperature. Minimum flash duration can be preselected.	
Charging time	230 V	0.03-1.3 s	0.02-0.8 s
speed modus	120 V	-	0.02-1.2 s
(min.- max. energy)	100 V	-	0.02-1.4 s
Ready display		Visual and audible (can be switched off), signals when 100 % of selected energy is reached	
Lamp outlets		3 main connectors with flash cut-off and ECTC	
Power output distribution		Symmetrical and individually asymmetrical	

*A4: operation 100 V- 120 V each with max. 9.0 f-stops, no strobo and no speed mode

15. TECHNICAL DATA



Scoro A2*

Scoro A2S

Controls	Illuminated silicone keyboard, resistant to dust and scratches. Wireless remote control of all functions with RFS	
Control range	over 9 f-stops in 1/10 or whole f-stop intervals. LCD display in joules or percentage.	over 9 f-stops
Colour temperature	ECTC technology (Enhanced Colour Temperature Control) for consistent but also deliberately modified colour temperature	
Modelling light	Halogen max. 3 x 650 W at 200 - 240 V Halogen max. 3 x 300 W at 100 - 120 V Proportional to flash energy and "full" and "low" settings. Proportionality adjustable to other broncolor power packs and monolights	
Additional functions	Sequence, delay, interval, t 0.1, colour temperature, alternation, stroboscopic, memory, etc.	
Flash release	Manual release button, photocell (can be switched off), infrared and RFS receiver (can be switched off), sync cable, IRX2	
No. of sync sockets	1	1
Computer connection for remote control	1	1
Stabilised flash voltage	+/- 0.5 %	+/- 0.3 %
Operating temperature range	-10°C bis +45°C	-10°C bis +45°C
Power requirements	230 V 16.0 A 120 V 15.0 A 100 V 15.0 A	16.0 A 15.0 A 15.0 A
Dimensions without handle	288 x 190 x 295 mm 11.3 x 7.5 x 11.6 inch	
Dimensions incl. handle	288 x 190 x 348 mm 11.3 x 7.5 x 13.7 inch.	
Weight	8.1 kg 17.8 lbs	9.2 kg 20.3 lbs

*A2: operation 100 V- 120 V each with max. 9.0 f-stops, no strobo and no speed mode

**Scoro A4*****Scoro A4S**

Controls	Illuminated silicone keyboard, resistant to dust and scratches. Wireless remote control of all functions with RFS	
Control range	over 10 f-stops in 1/10 or whole f-stop intervals. LCD display in joules or percentage	over 10 f-stops
Colour temperature	ECTC technology (Enhanced Colour Temperature Control) for consistent but also deliberately modified colour temperature	
Modelling light	Halogen max. 3 x 650 W at 200 - 240 V Halogen max. 3 x 300 W at 100 - 120 V Proportional to flash energy and "full" and "low" settings. Proportionality adjustable to other broncolor power packs and monolights	
Additional functions	Sequence, delay, interval, t 0.1, colour temperature, alternation, stroboscopic, memory, etc.	
Flash release	Manual release button, photocell (can be switched off), infrared and RFS receiver (can be switched off), sync cable, IRX2	
No. of sync sockets	1	1
Computer connection for remote control	1	1
Stabilised flash voltage	+/- 0.5 %	+/- 0.3 %
Operating temperature range	-10°C bis +45°C	-10°C bis +45°C
Power requirements	230 V 16.0 A 120 V 15.0 A 100 V 15.0 A	16.0 A 15.0 A 15.0 A
Dimensions without handle	288 x 190 x 400 mm 11.3 x 7.5 x 15.7 inch.	
Dimensions incl. handle	288 x 190 x 453 mm 11.3 x 7.5 x 17.8 inch.	
Weight	11.3 kg 24.9 lbs	12.5 kg 27.5 lbs

*A4: operation 100 V - 120 V each with max. 9.0 f-stops, no strobo and no speed mode

16. ENVIRONMENTAL PROTECTION INFORMATION

When no longer in use, this product may not be deposited in the normal household waste but should be brought to a collection point for the recycling of electrical and electronic appliances.

The materials are recyclable as marked. By re-use, recycling or another form of using old appliances you are making an important contribution towards the protection of the environment. Please ask your local authorities for the appropriate disposal point.



17. GUARANTEE

All broncolor power packs, lamps, monolights and accessories have a high quality standard. We offer a 2-year factory guarantee from the date of purchase (for the first owner) on the aforementioned units, except for flash tubes, halogen lamps, protecting glasses, cable, batteries, rechargeable batteries and textiles.

Faults resulting from non-observance of safety instructions, incorrect handling, use of accessories of another manufacturer or unauthorised intervention/modification are excluded from the factory guarantee. We assume no liability for damages resulting from non-observance of the safety instructions, incorrect handling, use of accessories of another manufacturer or unauthorised intervention/modification.

In case of technical problems please contact immediately the nearest authorised broncolor service station.

Article numbers, product descriptions and scope of delivery can vary from one country to another. Detailed information are available from your responsible broncolor distributor. Errors and misprints excepted.

DECLARATION OF CONFORMITY KONFORMITÄTSERKLAERUNG DECLARATION DE CONFORMITE

We / **Wir** / *Nous* :

Bron Elektronik AG, Hagmattstrasse 7, CH-4123 Allschwil, Schweiz

declare under our sole responsibility that the product
erklären in alleiniger Verantwortung, dass das Produkt
déclarons sous notre seule responsabilité que le produit

bronzcolor Scoro A2, Scoro A4, Scoro A2S, Scoro A4S

to which this declaration relates is in conformity with the following standard(s)
or other normative document(s):

**auf das sich diese Erklärung bezieht, mit der/den folgenden Norm(en)
oder normativen Dokument(en) übereinstimmt:**

*auquel se réfère cette déclaration est conforme à la (aux) norme(s)
ou autre(s) document(s) normatif(s):*

EN 60065/A1	EN 55014	EN 300 220-1, -3
EN 50371	EN 60950	EN 301 489-1, -3

following the provision of the Directives:

gemäss den Bestimmungen den Richtlinien:

conformément aux dispositions des Directives:

2006/95/ECC	2004/108/EEC	99/5/EEC	96/EEC	95/EEC
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Place and date of issue:

Ort und Datum der Ausfertigung:

Lieu et date:

Allschwil, 11.07.2008

Name and signature of authorised person:

Name und Unterschrift des Befugten:

Nom et signature du signataire autorisé:



Marcel Griessmann
Technical Manager



8.4

2.0
8.3

broncolor scoro

lamp 2
lamp 3
modelling light
sequence
101 opt

6.3J
493J
prop 3
off
1/810

test

speeds

user

reset

select

help