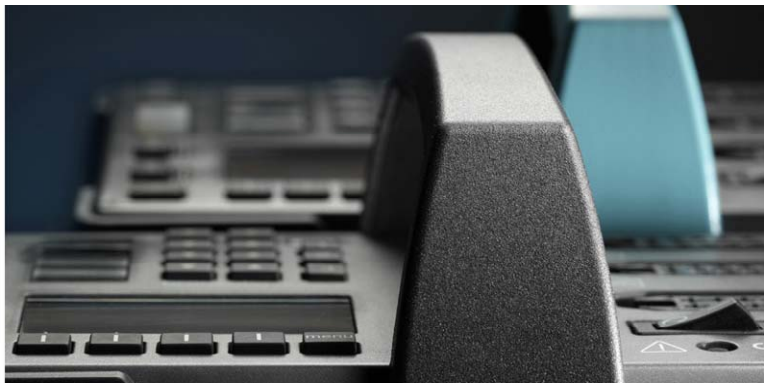


pressinformation

No. 2-3134/10

September 2010

broncolor Scoro A from an engineer's point of view



Charging speed and mains protection

The desire for even faster charging high performance flash units is limited by the maximum capacity of the mains (AC-line) supply. Fuse protection 15 A or 16 A in private households as well as in business is usual in most parts of the world. Flash units can be temporarily used with a higher charging current, over 25 A, but only for individual flashes. With longer flash sequences and high flash energy, the charging speed has to be reduced to avoid a cut-out of the mains supply.

What use is a quick charging speed if no rapid flash sequence is possible afterwards? Therefore, a new charging technique had to be found.

The broncolor Scoro comes with a new charging concept. By employing an active mains (line) filter, known as PFC (Power Factor Correction), the mains energy efficiency has been increased by almost 100%. Conventional charges have, in comparison, an energy efficiency of around 50%. Therefore, the charging speed has been increased dramatically even with constant power-line load. The Scoro can be used with a maximum power output and for long sequences with rapid flash succession on most mains supplies without any restrictions. With 230 V-mains, this operation mode is even possible with a building fuse protection of 10 A. And with the mode "slow charge", operation on very weak mains is possible as well. The power-line load with this new charging concept is so moderate that a multilevel adjustment of the charging speed, which often can be found in this power class, is not necessary.

Universal power distribution with three independent power packs

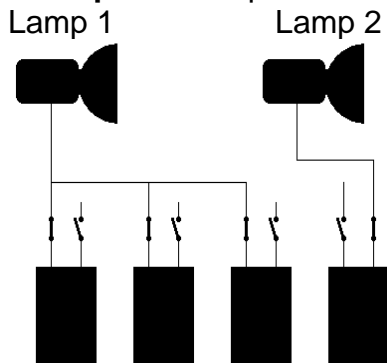
Often, numerous internal power storages are allocated to the different lamp channels in power packs with asymmetrical power distribution.

In the following example, three power storages are allocated to lamp 1 and one power storage to lamp 2.

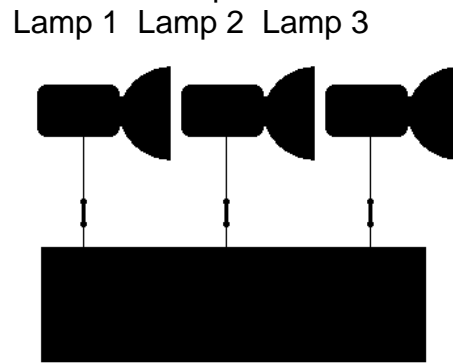
With Scoro, every lamp takes the necessary energy from a collective power storage, as though every lamp has its own power pack. This results in an unrestricted asymmetry over the whole adjustment range of all three lamps.

If capacitor packages become split when more than one lamp is connected, various restrictions have historically applied: Amongst other things, the power parts, which are not needed on one lamp, cannot be accessed through the other connections. With Scoro, this is different: independent of the number of connected lamps and their independent power, the maximum power is always accessible.

Example with 4 power storages



Scoro Technique



Optimal colour temperature control of all three channels

A constant colour temperature is desired, independent of the set power. A flash tube performs this task perfectly with maximum power.

When reducing power a constant colour is not possible without any special measures. Taking the example above with four power storages, a constant colour is only guaranteed in the first 2-3 f-stops. Afterwards, the colour temperature gets warmer. The more part power storages are used, the larger the adjustment range becomes with constant colour temperature. Such a refinement with a large quantity of small power storages is technologically limited though.

The reason for the change in colour temperature lies in the behaviour of the flash tube. The colour temperature changes its colour during one flash sequence. At the beginning, the colour is cold, changes to the optimal colour temperature and then moves over to a warm colour.

During flash control in Scoro, this knowledge is used to keep the colour temperature constant. With low power, only the power section with optimal colour will be chosen. The cold and warm sections are ignored. With increasing power, the exact amount in the direction of cold and warm parts is added to guarantee that the colour balance for the optimal colour is maintained. These power sections are selected for all connected lamps separately, so that each lamp is operated with the optimal colour temperature. The Scoro has three intelligent lamp channels, the Grafit only two. In Grafit, the intelligent lamp with the higher power is also placed in the section of optimal colours. The second intelligent lamp with the lower power also lies in the area of optimal colour temperature, but changes slightly with increasing asymmetry from about 3 f-stops onwards.

Two new buttons: „Speed“ and „User“

- **Speed:** This button could also be called „fashion“. By pressing this button, the power pack changes from an all-rounder to a specialized fashion power pack. In addition to the bias of faster flash duration speeds compared with the normal mode, it also charges faster.
- **User:** This button enables to switch over between two different sets of user defined functions.
 1. Two users share the Scoro and can adjust all their basic settings individually, including the language.
 2. Easy switching between two different setting situations.



Simplified menu navigation on the LCD

The user friendliness of the Scoro was given a high significance. All-important functions of the unit are adjustable with a few buttons. As long as no special flash features are needed, the LCD simply serves as an information display. This automatic mode is normally sufficient for daily use.

In addition to routine work, Scoro has a number of practical possibilities for special tasks to influence flash behaviour, e.g. a deliberate change of the flash duration or the colour temperature. An array of adjustment proposals can be chosen from, in most menu positions.

The Scoro has a comprehensive menu with many setting possibilities. A main group serves the deliberate adjustment of the flash behaviour for special tasks.

A few other groups are only used occasionally to modify the basic settings of the Scoro according to one's own needs.

A large menu can cause confusion. Therefore, the Scoro has a menu item, which reduces the menu to five main positions. All made changes to the basic settings before the menu reduction are saved.

Fast sequence of 50 flashes per second with optimal colour temperature

With Grafit, a sequence of up to 5 flashes per second with optimal colour temperature is possible. For quicker flash sequences, a change to t0.1 minimum was needed, which resulted in a shift to cooler colour temperatures. A special circuit in Scoro now allows a faster flash sequence with optimal colour temperature.

Please contact your broncolor dealer for further information or visit us at www.broncolor.com .