

ARRI[®]

LIGHTING

SmartPack

Portable professional digital dimming system



-  All-new, all-digital design
-  Highly accurate regulation scheme
-  Robust steel and aluminium case
-  2.5kW, 5kW and 10kW ratings
-  Wide range of socket outlet styles
-  DMX512 (1990) in and out
-  +/-10Vdc analogue control
-  Local control faders and master fader
-  Circuit breaker protection as standard
-  Optional RCD protection
-  Optional CE17 5-pole appliance inlet
-  Optional steel grab hoops

SmartPack – all-digital professional portable dimmer packs, for all television and live entertainment lighting, where quality and accuracy are absolute requirements.

SmartPack uses the latest digital technology to combine unrivalled levels of accuracy and flexible system configuration with industry standard DMX512 controllers and analogue (+/-10Vdc) desks. Local control faders are supplied as standard on all models. SmartPack allows any dimmer to be set to any of 12 curve settings, including non-dims and hot-patch. Response speed may be adjusted between 30–500ms, and a full range of test and diagnostic functions and indicators comes as standard.

And SmartPack is flexible. Many options are available, including CE17, Schuko and other outlet variants, CE17 appliance inlets, RCD protection, and steel grab hoops.

ARRI SmartPack – the practical digital solution.

The following is a general description of the SmartPack Digital Portable Dimmer range. For a more detailed specification, please contact ARRI (GB) Ltd or your authorised dealer.

Physical Characteristics

Each SmartPack shall be a steel and aluminium enclosure, 58cmW x 25cmH x 35cmD, containing the control and power electronics, operator interface and signal and power connectors for up to 12 dimmers. The enclosure shall be finished with a hard-wearing epoxy powder coating.

SmartPacks shall be available with a variety of power input and output connector options, in these ratings:

- 12 x 2.5kW @ 230Vac \pm 12.5%
- 6 x 5kW @ 230Vac \pm 12.5%
- 3 x 10kW @ 230Vac \pm 12.5%

SmartPacks may be specified with any of the following options:

- Standard or high risetime chokes
- Residual Current Device (RCD) — for three phase operation only
- 63amp 5-pole appliance inlet
- Protective steel grab hoops
- Single phase adaptor kit
- Delta mains adaptor kit

SmartPacks may be stacked up to six packs high, with optional steel hoops fitted, or four packs high without.

Electrical

SmartPacks shall normally operate on four wire single, two or three phase supplies at 230Vac \pm 12.5% per phase. Single, two phase and Delta operation shall be possible, using adaptor kits available as accessories. A good quality appropriately rated earth connection is essential.

Each dimmer outlet shall be protected against overcurrent by a single pole miniature circuit breaker (MCB) rated at 6kA rupture capacity and for 415Vac. MCBs with higher fault current rating, double pole and neutral disconnect MCBs may be supplied to special order.

The power devices shall be generously overrated solid state switching devices, assembled in sealed modules, as follows:

- 2.5kW Quad 40amp device
- 5kW Dual 40amp device
- 10kW Single 75amp device

These power devices shall be affixed to large extruded aluminium heatsinks, for continuous operation at full rated current.

Filtering and Interference

At full rated load the dimmer's insertion loss shall not exceed 5Vrms. At any control setting and with full rated load, the DC content of the output waveform shall not exceed \pm 1Vdc.

The risetime of a dimmer's current waveform shall be controlled by one or more chokes in the power train. At full rated load and at 90° firing angle the risetime of the output current from 10% to 90% shall not be less than 200 μ s (standard choke) or 400 μ s (high risetime choke). Higher risetime versions shall be available to special order.

Standard risetime chokes shall achieve BBC304 interference specification for 2.5kW dimmers, and high risetime chokes shall achieve the same standard for 5kW and 10kW dimmers.

SmartPack control electronics shall be immune to

disturbance by 20Vpp signals at frequencies above 10kHz. An optional ripple rejection board shall be available to offer immunity down to 183Hz.

RFI performance shall meet or exceed the requirements of EN55014: 1987.

Pack Control

The control electronics shall be mounted on a single pcb, mounted on an easily accessible sliding tray inside the base of the pack. A separate operator interface pcb, with controls and indicators accessible through the front panel, shall be provided to allow the user to configure and test the SmartPack. One slide potentiometer per dimmer and one master potentiometer shall be provided to effect local control at the pack, the result of which shall pile on to any incoming analogue or digital control signal.

The control electronics shall function correctly even if one or more phases of a multi-phase supply are absent. The control electronics shall be protected by fuses accessible through the front panel.

Controls, protected by a simple security procedure, shall be provided to:

- a) set the starting DMX address of the SmartPack, in the range 1—512
- b) select one of 12 preprogrammed dimmer profiles, including three non-dim and one hot-patch (always on) setting to any or all dimmers in the pack.
- c) select a response speed between 30ms and 500ms for any or all dimmers in the pack
- d) nominate a reference voltage for the 'full' output level of the SmartPack.
- e) reset the setup values to factory defaults.

Settings shall be recorded into long term battery supported memory.

It shall be possible to instruct the SmartPack to disregard the DMX input, for service or to isolate a block of dimmers. A 3-digit led indicator shall normally display the start address of each SmartPack, and shall also be used to display status in setup operations.

Thermal Management

SmartPack shall function continuously at full rated load in ambient (air inlet) temperatures up to 35° Celsius. One 12V brushless dc fan shall be integral to each SmartPack, and shall be controlled by the control electronics, in response to temperature readings taken from sensors adjacent to each power device.

A normally green led indicator on the front panel shall turn yellow in the case that any power device runs at a high, albeit safe, temperature. If any power device reaches an unsafe temperature, it shall be switched off, and the temperature indicator led shall flash red.

Control Inputs

SmartPack shall receive RS485 digital data to the standard DMX512 (1990). Passive passthrough of DMX data shall be provided, so that the failure or dysfunction of one or more SmartPacks in a DMX circuit shall not affect the passage of DMX data to downstream devices. DMX in and out connectors shall be industry standard XLR5 male and female, optically isolated to 2.5kV.

'Good data' and 'bad data' indicators on the front panel shall display the status of current DMX input. In the event of a DMX input failure or data corruption, the 'bad data' led shall flash and the last valid levels received shall continue to be used, until valid data is resumed.

Analogue signals at 0—10Vdc positive or negative going shall be connected via Bleecon connectors on the rear panel, and shall pile on to levels generated from the DMX input and local faders. 10kW SmartPacks shall receive 6 analogue control signals, and pass three signals through an output connector to drive a second 10kW SmartPack.

Power Wiring

Wiring access shall normally be via a cable gland on the rear panel. Terminals shall be provided to accept five cores at up to 35mm². Single phase, two phase and delta wiring adaptor kits shall be available as accessories.

SmartPacks may optionally be supplied with a 63amp 5-pole CE17 appliance inlet fitted to the rear panel (three phase operation only).

Load Connectors

12 x 2.5kW SmartPacks shall be available with the following output connector versions:



- single CE17 16amp socket per dimmer



- dual Schuko socket per dimmer
- dual French 16amp socket per dimmer



- 6 x 5kW SmartPacks shall be supplied with one 32amp CE17 socket outlet per dimmer as standard.



- 3 x 10kW SmartPacks shall be supplied with one 63amp CE17 socket outlet per dimmer as standard. (This example also illustrates the CE17 appliance inlet option.)

In order to maintain the highest possible standards, ARRI (GB) Ltd reserves the right to alter specifications without notice

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