



## Supply considerations for Anytronics DFBs and Lightboxes

### 1. Mains Supply Voltage

All Anycolour fittings including DFBs and Lightboxes are designed to work from **220-240 V ac nominal supplies at 50/60Hz**. (Note that the output capability of the DFB outputs on CD01 and DMX to DFB converters are reduced on 220 V supplies.)

### 2. Mains Supply Current

**The supply used should be capable of supplying at least 1A per fitting, regardless of the stated rating of the fittings.** This is because on connection to the supply, a short lived surge current will be taken which will trip breakers or blow fuses of a lower rating. The surge current depends on the total number of fittings, supply line impedance and the supply voltage at the precise moment of connection of the supply.

We therefore do not recommend powering any more than ten DFB fittings from a standard UK mains plug fitted with a 13 Amp fuse. You may get away with more connected for a while, but sooner or later the fuse will require replacement.

Similarly for trouble free operation on a supply protected by breakers, we do not recommend using more fittings than the numeric current rating of the breaker. eg no more than 25 fittings on a 25 Amp breaker circuit.

### 3. Earth Leakage Circuit Protection

In many institutions it is a requirement that all supplies be protected by RCCD earth leakage circuit protection. This can give rise to problems under two separate conditions, viz during supply connection and then over the longer term.

Due to the complex switch-mode supply circuitry used in DFBs and Lightboxes, there is an unavoidable injection of high frequency noise as current into the mains earth connection. This high frequency earth current is very variable and its effect on RCCDs is unpredictable (dependent on RCCD manufacturer). An earth current figure equivalent to **1.5mA per complete fitting** has been found to work well as a guide for calculation purposes. For this reason, we recommend that a maximum of 20 fittings be supplied through a standard 30mA RCCD device. (Note that 100mA trip RCCD devices are also available but may not comply with your local regulations.)

On connection to supplies, and on entering and leaving 'blackout' condition, a very short current pulse is often injected into the mains earth connection. This current is quite high, but is so short lived it tends not to trip RCCDs. The cumulative effect of many DFBs in an installation will still trip RCCDs on supply connection. Fortunately the same guide rule as that given above has been found to work in practice. Take the RCCD trip rating in mA, divide by 1.5 and you have the maximum recommended number of fittings that should be supplied from that circuit. Please remember however that this is only a guide, and that different RCCDs are more or less sensitive.