The purchase price of a Digital Cinema projector is only a part of its complete lifecycle cost. In fact, over the years, the operating costs can accumulate considerably. So, it stands to reason that keeping an eye on operating costs for the various projector models can help to reduce them while optimising future profits. Below, we consider Xenon-selection, also cooling, air-extraction and maintenance.

XENON LAMPS: STANDARD OR DIGITAL?

Projectors that can be operated with *standard* Xenon lamps will work out much cheaper in the long run than models that limit you to specialised digital lamps. Standard lamps are not only more cost-effective, but they can also be obtained promptly. Ensure, of course, that the lamp can be replaced and adjusted easily by a properly-trained projectionist. It's also best if lamps can be replaced individu-

known to suffer in this way. Also, a well-insulated double-walled lamp-house will often help lower the projector's internal temperature.

EXHAUST AIR

As mentioned, above, the DLP® Chips and the electronic components must be well-cooled, which is why digital projectors need more efficient ventilation systems than their 35mm counterparts. But these can produce higher exhaust air-flow rates – more powerful ventilation systems might be needed to extract the warm excess air from the projectors, thus raising installation expenses and energy costs. Also determine whether the air is 'actively forced out' of the projector or whether it must be extracted by the booth exhaust system. Kinoton's DCP projectors with enforced cooling, for example, normally manage with the existing booth ventilation arrangement as they offer roughly the same exhaust air-flow rate as, say, a classic FP 30 D film projector.

What will Digital cost YOU?

Buying your shiny new digital cinema projector is only part of the cost equation – indeed, if Digital is to work efficiently, then the anticipated running costs need also to be calculated. Kinoton's D-Cinema product manager **Markus Naether** therefore advises exhibitors on how to reduce running costs.

ally, for example, without the need to change a complete lamp-house module. As to light efficiency, an optimised light-path can considerably increase a projector's brightness – and, at best, this might even mean being able to use the next bulb-size down which, in turn, will lower both lamp cost and energy consumption.

COOLING SYSTEM EFFICIENCY

Heat definitely causes ageing. So, the better care we take to properly cool the precious DLP® Chips – along with the other optical components and sophisticated electronic circuitries of any digital projector – the more we help extend their service life and thus reduce spare-part replacement costs.

In fact, almost 80% of light emitted by a standard Xenon lamp is infra-red radiation – heat. And, while some of this is dissipated by specialised heat filters actually positioned in the light-path, it still has to be removed from the projector, which should be designed so that the cooling air freely circulates between the components and thus avoids harmful heat-spots. Compact projectors in particular are

CUTTING MAINTENANCE REQUIREMENTS

There are several ways to pare down the future service requirements of a digital projector. Using fine air-intake filters, for example, will help prevent dust-accumulation in the projector. All critical optical and electronic components should be reliably protected against dirt to minimise cleaning requirements. Also, a self-purging water-cooling system supersedes the, often laborious, manual venting.

Another important consideration is the ease and speed of service and maintainance. Therefore, do ensure that all optical and electronic components may actually be exchanged *in situ* i.e. without the need for sending the projector back to the supplier. Moreover, all projector componentry should be easily-accessible and quickly-replacable so as to ensure that it is up-and-running as soon as possible. And bear in mind, too, that remote-maintenance capability can help further minimise unwelcome downtime. As all exhibitors know, there is nothing worse than a 'dark screen'. **S**