



## Equivalence of the Tintman Instrument

The apparatus stipulated in Road Traffic Regulations (9-1338 or ECER43) for vehicle window light transmission measurement is for use in a laboratory method and employs a precision stabilised light source and long focal length collimating optics to produce a parallel beam of light. This apparatus is not suitable for day-to-day field use.

What we have endeavoured to do with Tintman is produce a portable instrument that gives equivalent readings to the laboratory method. In a sense Tintman is an equivalent method, and gives readings that are typically accurate to better than  $\pm 3\%$  transmission. Note that Tintman is not formally approved as an equivalent method as no mechanism exists to do so. However, the four reference glasses used to set-up Tintman are themselves calibrated using a NAMAS traceable reference method and the response of Tintman is therefore traceable to that method.

The reference glasses used have typical transmission values of 10%, 20%, 50% and 70% and cover the range of window tints likely to be encountered in practice.

The light source used in Tintman is a small Krypton incandescent lamp that is powered from a regulated voltage source to produce an equivalent colour temperature of approximately 3000° K. The light beam is collimated with short focal length optics to produce a roughly parallel beam of light over the likely working range of the instrument. A colour filter is fitted over the Tintman's solid state detector to give an excellent approximation to the ideal ICI<sup>♦</sup> Photopic Response or ideal eye response as shown in the attached chart.

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<sup>♦</sup>International Commission on Illumination

Chart1

### Tintman Response Curves

