



# **COSINE DEVELOPMENTS**

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## **Emergency lighting at 50% light output : The old Standard.**

**By: Stirling Marais**

The traditional requirement for emergency lighting to provide 50% light output stemmed from diverse applications. A standardised emergency lighting luminaire may have been used to illuminate escape routes, high risk areas and perhaps even serve as standby lighting. Financial constraints have now warranted a more cost effective approach.

The International trend is towards using lower emergency light outputs for escape routes and anti-panic public areas thereby reducing costs. As our SABS requirements are now based upon European Standards it makes sense for us to do the same. Emergency light outputs from European gear may be as low as 10% for a 65 Watt lamp. Our minimum illuminance requirements for escape routes and open public anti-panic areas are 0.3 and 0.5 lux respectively with a maximum uniformity ratio of 40:1. These low illuminance levels can be achieved using low output emergency gear through careful lighting design.

The cost of the emergency lighting gear increases with lamp wattage if 50 % light output is required for one hour duration. For example, a 20 Watt lamp burning at 50% requires five 2 Ahr ni-cad cells. On the other hand, a 65 Watt lamp burning at 50% requires eight 4 Ahr ni-cad cells. Also, the control gear for the 65 Watt lamp requires a more powerful charger for the larger capacity battery pack and a more powerful inverter to drive the lamp. The cost of the emergency gear required to drive a 65 Watt lamp at 20% is approximately 60% of the cost of 50% light output gear for the same lamp. Emergency lighting gear providing 20% light output should therefore be used for most applications.

For high risk areas such as moving machinery, cashiers, security checkpoints, *etc.*, higher light output emergency lighting is required. In this case the most cost effective solution may be in the form of dichroic spot lamps providing 100% emergency light output.

For standby lighting (lighting required to enable normal activities to continue) the most cost effective solution may be a standby generator because the cost of the emergency gear to drive one 65 Watt lamp at 100% light output may be three times the cost of 20% light output gear!