



----- Technical Paper -----

LIGHTING IN POULTRY HOUSES

Lighting in agricultural buildings is becoming increasingly more important, particularly in poultry houses attempting to simulate natural daylight as required by the welfare codes, whilst using the most cost effective methods of installation and running costs.

As tungsten bulbs are being phased out the poultry producer has to consider alternatives, all of which offer reduced overall running costs but at differing installation costs.

The options are fluorescent lighting using either analogue high frequency control or digital high frequency control; standard dimming fluorescent lights; energy saving light bulbs or the latest LED lights. All have distinct advantages and disadvantages, but will show considerable running cost savings when compared to traditional tungsten systems.

Hydor offer all the very latest lighting product options and are able to supply bespoke controls to meet all types of system requirements.

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Hydor supply a wide range of lighting products and standard and bespoke controllers

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Standard Dimming Fluorescent Lights [SDFL], which are normally spaced at six metre intervals along and across the poultry house, offer savings of 40-50% against the traditional tungsten bulbs due to half the number being required. Various types of tubes [T12] with differing light outputs and colours are also available. Dimmer controls are inexpensive and require three cables plus an earth to the fittings. Although some spiralling can occur at lower settings with these fittings, this should be taken into consideration when selecting the most appropriate lighting for poultry house.

Analogue High Frequency Fluorescent Lights [AHFFL] offer a further 50%, again a considerable saving in running costs compared with traditional models. These can be controlled down to 3% of light output with reduced risk of spiralling. Controls are more complex, offering simulated dawn/dusk lighting; manual dimming or twilight effects. The control requires two mains cables and a good earth to all fittings. In addition a screened two core control cable is required due to the high frequency nature of the signal.

Digital High Frequency Fluorescent Lights [DHFFL] offer similar running costs and purchase price to the AHFFL fittings, with dimming down to 3% of light output available. DHFFL's require four standard cables plus a good earth to the fittings for their control, thus reducing the cost of installation in comparison to the analogue version. The controls available are as with AHFFL but are slightly more expensive due to the signal conversion required.

Energy Saving Bulbs [ESB] are suitable replacements for tungsten bulbs, particularly where dimming is not required. They offer considerable savings in running costs and can be directly plugged into existing lamp holders keeping purchase and installation costs at a minimum.

Dimming versions of these bulbs are available, which requires a complex controls system. The type of livestock produced should be taken into consideration when selecting this option, as the bulbs need to be "heated up" at maximum brilliance for approximately one or two minutes before they can be dimmed which may not be suitable for select livestock.

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A variety of Light Emitting Diode [LED] lights are available and care should be taking in selecting the correct unit to suit your application. Some LEDs are not dimmable, whilst others can be dimmed with the use of special controls. Similar to ESB's the majority of LEDs produce light towards the blue end of the spectrum causing poultry physiologically to believe they are cold, thereby tending to eat more to raise their metabolic rate and produce body heat.

LEDs are also available which have a higher red light output, but a reduced infra-red content which can cause aggression. These are easily dimmed by conventional controllers readily available from Hydor. Replacing 1.2 metre fluorescent lights at 6 metre intervals would require 9 watt LEDs spaced at 3 metre intervals. The cost of the lights would be similar but would provide approximately 60% running cost savings when compared to dimming fluorescents and traditional tungsten bulbs.

Hydor are able to produce manual dimming controls or more sophisticated controls giving simulated dawn and dusk effects, with individual lane switches and overload protection. These controls can be combined into larger panels controlling other functions within the poultry house, including ventilation, heating, cooling, inlet, pop-hole controls and mains and temperature alarm monitoring systems.

For further information on the products and solutions available please contact Hydor on 01725 511422 or visit www.hydor.co.uk

Hydor Ltd is part of the £65 million Elta Group, a family of businesses with operations in six countries on four continents which, together with a network of international distributors, provides quality fans and related air movement equipment to customers worldwide.

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