

# BATTLE OF THE BULBS



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YOU GLOW**

**PestWest**<sup>®</sup>  
FLYING INSECT SCIENCE

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When “new” technology plays catch-up to the PestWest/Havells Quantum BL lamps.

For many years, PestWest has been merging science with applied technology to provide a diverse range of professional and specialized flying insect management light systems. An essential component of this range, and part of the PestWest commitment to ‘flying insect science,’ is the innovative, market-leading and highest-specification Quantum BL range of ultraviolet (UV) lamps.

From healthy competition has emerged a new challenger to the industry leading PestWest-Quantum lamp; the Actinic BL lamp. A true “Battle of the Bulbs!”

So, what does this mean in terms of professional pest management? Does the Philips Actinic BL range of lamps represent an innovation in flying insect management and should the pest management industry look to embrace what appears to be a major advance in UV lamp technology? Or is Philips simply playing ‘catch-up’ with PestWest?

**“The issue of effective life of lamps is not simple and can depend upon how they are operated, as much as the quality of the lamp itself.”**

These are some of the questions that will no doubt be on the mind of many pest management professionals (PMP) and indeed their clients, as Philips, a company with a strong global reputation, releases their exciting new line of products.

In a time of increased environmental awareness it is no surprise to learn that the Philips Actinic BL lamps are 100% lead free; contain a reduced amount of mercury; and use environmentally friendly aqueous (water-based) phosphors as opposed to solvent-based tri-phosphors in the manufacturing process.

Keeping with the ‘sustainable’ theme, an energy-saving recommendation from Philips is to change from the larger diameter T12 lamps to the new Philips TL-D (T8), a Sylvania alternative. By making this change, Philips claims a 10% savings in energy. Another benefit of using slimmer lamps is the reduction in energy consumption during manufacturing and the use of smaller quantities of raw materials such as glass & coatings.

Actinic is certainly an attractive range in terms of environmental benefits but what about fly control? It is encouraging to find that Philips has not forgotten about flying insect management, the reason behind all of this – the flying insect pests!

The spectral distribution of the UV light produced by the Actinic BL lamp matches closely the spectrum of sensitivity of the House fly. Also, an increased UV light output over standard lamps can attract greater numbers of insects and cover a larger area.

HACCP requirements are always of concern and the Secura version of the Actinic lamp is available, which utilizes a shatterproof sleeve to keep all glass and components together in case of accidental lamp breakage, thus avoiding any risk of glass fragments in products.

On first impression, it would seem that Actinic, the ‘challenger,’ is able to deliver a knockout punch to the Quantum BL ‘champion’ in ‘The Battle of the Bulbs.’

**However, those with a shrewd eye will have noticed that this may not be the case – it may just be a case of reinventing the wheel.**

First, we need to look at the industry history.

Back in 1997, PestWest approached Sylvania Lighting International (Sylvania) to develop a new fly attractant lamp. Until that date, the now Havells accepted industry standard was the BL350 based upon the then available phosphor technology.

Sylvania applied the knowledge obtained from extensive research sponsored by PestWest in conjunction with entomologists at the University of Birmingham, UK, and the Quantum BL was born.

To fast-forward and get straight to the point, we learn that although the Actinic range is being launched with a fanfare of marketing, a history lesson in flying insect science reveals that Philips may not have created much that is new, rather only bringing their product up to the specification of the Quantum BL, which for over a decade has been at the peak of UV lamp technology.

The phosphors used in the Quantum BL range have always been 100% lead free. Only the seals holding the filament elements at the ends of the lamps were until recently made of lead glass because of

its lower melting point and even this has now changed.

Similarly, the amount of mercury used per lamp is the lowest practical level achievable consistent with reliable manufacturing techniques.

PestWest and Sylvania have used the environmentally friendly water-based phosphor technology, with the added benefit of maintained high UVA output, for over a decade.

So Quantum BL lamps have always been environmentally friendly, even before it was fashionable at THAT time to be “green,” we’ve proven sustainable since that time.

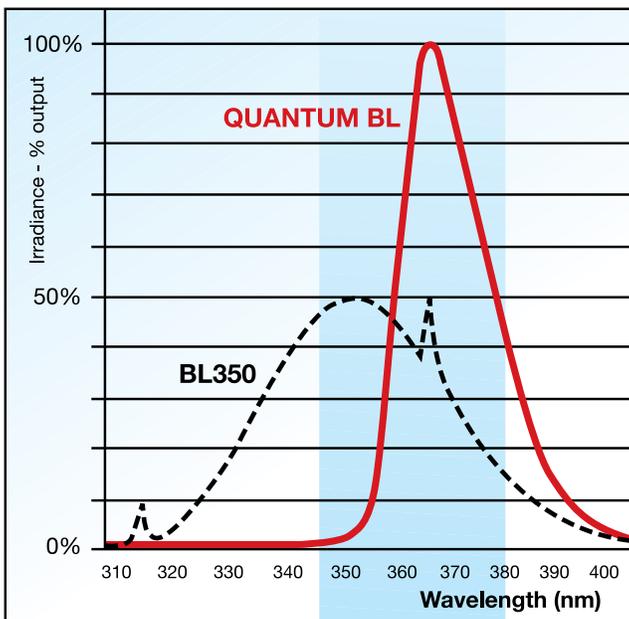
The recommendation to change from the larger diameter T12 lamps to the new Philips TL-D (T8) (a slimmer alternative) appears useful, as making this change can result in a 10% savings in energy and a reduction in raw material. But things are not always as simple as they first seem.

It is important to note that although smaller diameter lamps use less material in construction, the internal surface area of the glass is lower, so for a given wattage lamp the phosphor coating has to work much harder and will therefore wear out much more quickly.

This may lead to a greater number of lamps having to be used.

Of greater importance for the practical PMP is the fact that the new Actinic range does not include a T12 lamp. To get a T12 lamp, PMPs will have to go back to the older generation Philips range, which may not be available in the future and certainly does not have the same beneficial features of the new Actinic lamps.

Furthermore, T12 lamps are used in a wide range of the flying insect management light systems currently in use in the industry, so many PMPs could be left out if they switch exclusively to Philips products.



Power distribution curve of Quantum BL compared to standard 350BL ultra-violet lamps. The distribution of the UV light produced by the Quantum BL lamps matches closely the spectrum of sensitivity of the House fly.

Fortunately, T12 Quantum BL lamps are available, which means that a higher quality of flying insect management can still be achieved with units that require this size of tube.

PestWest & Sylvania have not ignored the essentials of fly control. The spectral distribution of the UV light produced by the Quantum BL lamps is designed to match closely the spectrum of sensitivity of the House fly. In Quantum BL lamps, an increased UV light output over standard lamps can also attract more insects and cover a larger area.

A closer look at the Quantum BL range reveals that PestWest has continued to have HACCP at the forefront of their thinking by supplying these lamps with a shatterproof coating as standard in all their professional UV fly killers. This has been a standard fitment to such machines for many years.

The shatterproof Secura version of the Actinic bulb is available, but not all shatterproof coatings are the same.

One of the best materials for shatterproof sleeves is FEP® shatter resistant resin. This can be expensive but it is the best the industry offers and is used exclusively on PestWest’s range of high quality UV lamps.

Tests have shown that FEP® allows maximum UVA transmission as this coating reduces the UVA output by only a minimal amount.

Other features of the FEP® shatterproof coating include a guarantee that the product will not flake, melt, discolor or drip. In addition, compliance with the forthcoming EN 60068-2-75 for glass retention is assured. The coating is also approved as non-toxic by the Food and Drug Administration.

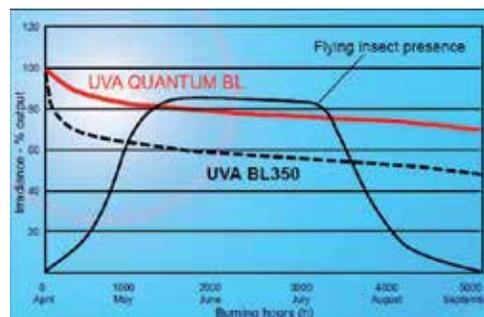
It is thought Philips will recommend that their Actinic range of UV lamps only need to be changed every 2 years. If this were to occur, it would revolutionize current thinking.

As it stands, changing lamps every 2 years would be in breach of the requirements set out by third party auditors such as American Institute of Baking, International Food Standards and the British Retail Consortium. Evidence of efficacy over a two-year period will need to be provided in order to change these auditor requirements.

This recommendation would also go against the recommendations of the vast majority of other manufacturers of flying insect management light systems. According to these other manufacturers, the failure to change lamps according to manufacturers’ recommendations can be detrimental to efficient fly control.

The issue of the effective life of lamps is not simple and can depend on the quality of the electricity supply. Where power sources are unreliable, the lamps may switch on and off intermittently and every time this occurs, the tube life degrades, thus reducing the effective lifespan. The positioning of flying insect management light systems in premises has always been crucial in terms of flying insect management. If the effectiveness of lamps is declining over a 2-year period, the reduction in performance may be exacerbated depending on the location of the electric fly killer, especially if placed close to competing light sources. Manufacturers never have control of these two factors that are often important in the field.

Of course, as Philips brings their products to match the specification of the PestWest & Sylvania Quantum BL range of lamps, the new competition created can only benefit the industry, resulting in more choice for the end user and a continuing drive to improve standards in public health pest management. choice for the end user and a continuing drive to improve standards in public health pest management.



Maintenance data show a significant increase of Quantum BL in output maintenance after 4000-5000 hours of use.



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