NPL makes light work of home grooming

March 1 2010

The National Physical Laboratory (NPL) and the University of Dundee recently assessed the light emitted by a home-use intense-pulsed light (IPL) hair reduction system and confirmed that it is safe. This confirmation is important, as IPL devices must meet the necessary safety guidelines, to ensure users are protected in the case of accidental exposure to the human eye.

IPL is mainly used to treat certain cosmetic conditions - it can remove unwanted body hair, reduce the appearance of surface veins, and generally improve skin's appearance. As it is a virtually painless non-surgical technique, which generally produces positive results, it is a very popular treatment. Traditionally delivered in specialist salons, the market has now grown to include units that can be used at home.

IPL, as its name suggests, delivers a short, intense pulse of filtered light into the skin. Because of the potential optical hazard posed by these pulses of light IPL practitioners and patients in salons are required to wear eye protection.

Now that home-use IPL systems are available it is more important than ever that they are thoroughly tested to ensure that they meet the necessary international safety guidelines, in case a user's eyes are ever accidentally exposed to the optical radiation they emit.

Home-use IPL systems tend to have lower fluence rates (i.e. the amount of light energy emitted over a given area) than salon-based systems to minimise the optical hazard. They also have a number of physical safety

features to further minimise the risk of exposure to the human eye.

In 2009 one of the first home use IPL products 'iPulse Personal' (developed by UK-based company CyDen Ltd) became available to the UK market. Whilst this product was in its development stage NPL and the University of Dundee measured its absolute spectral radiant exposure, and helped CyDen Ltd to confirm that the design was within safe limits. The product met the necessary guidelines and the results were published in the journal *Lasers in Surgery and Medicine* in 2009.

This research builds on NPL's earlier work which developed a traceable measurement system based on the dosimetry needs for salon-based IPL devices. The methodology developed for these measurements can generally be applied to all IPL systems.

Provided by National Physical Laboratory