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Mike Murphy, B.Sc., M.Sc. (Bioengineering) has been involved with lasers and IPL systems since 1986 when he worked with plastic surgeons in the Plastic and Reconstructive Surgery Unit, Canniesburn Hospital, Glasgow. He is a physicist and was involved in clinical research into the removal of vascular and pigmented lesions and tattoos using lasers and was also the laser safety officer in the hospital's laser unit. He has published a number of clinical reports in peer-reviewed journals across the world in both clinical and theoretical aspects of laser/IPL treatments in skin. In the last few years he has worked as an independent consultant in both lasers and IPLs around the world.

## **Mike Murphy** asks, why don't manufacturers supply energy meters with their IPL systems?

Many clinics and salons throughout the UK now offer IPL systems as part of their daily service whether for hair removal or the treatment of thread veins, brown skin marks or facial rejuvenation. They are now as routine as facials, aromatherapy and nail treatments even though they have only been in the market for less than 10 years.

But, how do you know if your system is operating at its best? If you don't have an energy meter to check it from time to time, you won't! However, many manufacturers do not supply such meters with their products - why not? Can you imagine driving your car without a speedometer to tell you how fast you were going? Of course not! So why are we expected to use a hi-tech piece of equipment without being able to check it is working properly?

Every IPL system uses a flashlamp (or two) – this is where the light is generated. Essentially flashlamps are highly engineered light bulbs. As with your domestic light bulb they wear out over time. The more you use it the less light it generates. So, after 5,000 shots the

> lamp will likely not produce as much light as when it is new. After 10,000 shots it might be generating only 50% of its original power, or less. This means that you should increase the power to your clients as the lamp ages. But who does this? As

far as I am aware, nobody. That's because there is no way to measure the energy output of an IPL system without using an energy meter. Ideally you need to measure the power at the point of delivery – that is, at the part, which is in contact with the client. (Internal measurements do not tell you how much energy is reaching the skin!) In addition to the lamp wearing out, an IPL's electrical and optical system may also become less efficient over time. This will also affect the power output.

The upshot of all this is that you may be under-treating your clients. Have you noticed that some clients appear to take much longer than others to achieve a good result? This may be due to differences between individual clients, but it may also be due to your IPL system delivering lower than expected powers. In some cases your unit might be generating a power that is simply too low to destroy the germ cells in hair follicles.

Simply put, this means that some clients are going to need too many treatments while others may never achieve good results. Either way, this is bad for business and your reputation.

What can we do about this? I have recently come across a company based in Sweden (www.photonova.com), which has just launched an energy meter specifically designed to measure the output of almost any IPL system. It is called the EFM meter and this device can tell you the energy density and the length of the pulse from your IPL unit. It is critical to know each of these parameters to ensure safe and effective treatments and to generate good, consistent results ultimately.

As far as I know it is the only device on the market, which can measure all IPL systems' output. If you want to be sure you are delivering the best service to your clients, then I suggest you look into checking your system. Which brings me back to my original question – why don't manufacturers supply energy meters with their products? It seems obvious to me that they should. Or, are they trying to hide something?

Can you imagine driving your car without a speedometer to tell you how fast you were going? Of course not!