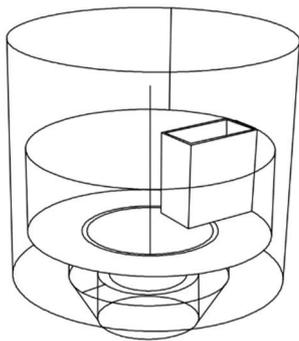
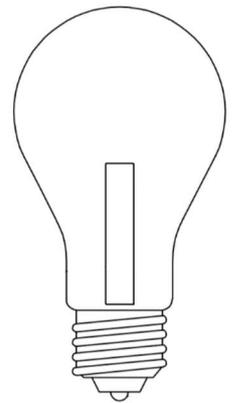


# Creating new IP to support the lighting industry.

## Summary of Invention – Dimmer on Board

- **All control electronics fully housed within the E26/E27 base of the lightbulb.** This exposes as much of the light as possible and retains the bulbs aesthetic qualities.
- **Dimmer is driven by DC electronics using a pulse-width modulated (PWM) signal** for smooth dimming control. The PWM signal is produced by a timer in a microcontroller, which is itself software controlled and keeps the electronics required to a minimum.
- **The dimming and control circuit power supply is independent of the LED power source.** A clean isolation barrier between low voltage and mains voltage is created through this independence and in addition power and heat losses reduced.
- **Rechargeable battery power complete with charging access can be fitted between boards.** This design minimises the size of the solution whilst providing options for trickle charging and re-charging to be included as required for the application.



- **Communications technology is included in the design but is decoupled from the dimming technology.** This design increases robustness and minimises electrical disturbance.
- **Network control of bulbs can be supported.** Systems for single or multiple bulbs either individually or as groups can be developed through customisation of the communications board using the most appropriate technology for the application.
- **Wireless communications utilising multiprotocol 2.4GHz** devices can be designed in. Protocols such as Wi-Fi, ZigBee™, Thread and Bluetooth® enables the utilisation of, star networking, mesh networking and direct point to point control. Control through both individual phone apps and central hubs can be accommodated.
- **Support for integration with DALI® systems has been included.** Development of an interface to the DALI system means that control of the bulbs at least partially via mains power would be possible.

Small, low power, configurable dimming technology that works from within the light holder.

