Zero Maintenance Signalling from Unipart Dorman

The Challenge

During the last decade we have introduced a variety of LED signals that provide a long and reliable operational service. The very low failure rates (over 40 million fault free operational hours for GPLs) and slow degradation of the LED intensity, allowed our design engineers to consider how to design the next generation of signals.

The next challenge was to enable the industry to benefit from the signal performance and reduce the whole life costs and operational risks even further.

The Solution

We set out to design a range of signals that would be maintenance free - never needing a scheduled maintenance visit thus reducing the time that staff were on the operational railway. We also aimed to remove the risks associated with working at height and realised that this would also significantly reduce the need for heavy structures with load bearing capabilities for maintenance personnel, and massively reducing the network maintenance costs and the safety costs incurred in going trackside.

Our experience told us that we could develop highly efficient and reliable circuits and we knew that the existing annual maintenance was mainly limited to cleaning the lenses, therefore we concentrated on the light output parameters and maintenance cleaning requirements. Our solution was to develop a 'self cleaning' signal.

The project as a whole has been running for over a decade, starting with the development of ranges of LED Colour Light Signals (CLS) signalling that were designed to retro-fit on to existing infrastructure in the same 'format' through lightweight versions to the current iLS (integrated Lightweight Signal), which is a radical development featuring the signal head and post being integrated into a single composite housing and post, with a trunnion/enclosure base.

The Result

Network Rail has amended its maintenance requirements of these signals as follows:

- Unipart Dorman iLS and CLS LITE signals now are designated **'self-cleaning'** and require no visits for signals in locations where they are exposed to free falling rain.
- All other LED and filament signals on the network have an annual maintenance visit cycle.

The Benefits

Since the introduction of the Unipart Dorman LED signals, over 110,000 LED modules are now installed on the UK rail infrastructure, and the September 2015 Network Rail ROSE NR/SIG/10665/Mod 001 document now means that a significant number of them no longer require annual maintenance visits, driving increased savings and increased safety through fewer workers being required at the trackside.

Previously these signals would have required an annual check, involving a minimum of two track workers. With the new maintenance standard, we are removing the need for these visits, reducing the cost of ownership of the signal to the purchase and installation cost.

It is estimated that the 1000 filament Colour Light Signals which have been replaced by Unipart Dorman signals will be **reducing maintenance costs by over £4,061,000*** over the fifteen years of their projected life, and with a further circa 1000 to be installed in CP5, these benefits will double.

Additionally, there has been very few Unipart Dorman signal failures in operation. **Filament signals previously accounted for 72,000 delay minutes, equating to a cost of £2,775,000*** annually which will be eliminated once all filament lamps are replaced.

These significant cost savings are being delivered now as a direct result of Unipart Dorman's LED signalling innovations.

**Calculated on 2005 values using RPI to estimate current costs.*

Unipart Rail (Infrastructure)
Gresty Road, Crewe,
Cheshire CW2 6EH
Tel: +44 (0)1270 847 600
Fax: +44 (0)1270 847 601
email: enquiries@unipartrail.com

UNIPART RAIL

Our products are distributed through Unipart Rail
Visit **www.unipartrail.com** for details