

# LIGHTWEIGHT RAIL SIGNAL SYSTEM

| LED Lightweight Signal System Features                           | CLS | PLJ | PLS<br>SUB<br>SoS | MARI<br>SARI /<br>PRI | BRS |
|--|-----|-----|-------------------|-----------------------|-----|
| Minimal phantom effects without external hood                    | ✓   | ✓   | ✓                 | ✓                     | ✓   |
| Zero maintenance (in normal applications)                        | ✓   | ✓   | ✓                 | ✓                     | ✓   |
| Environmentally protected to IP65                                | ✓   | ✓   | ✓                 | ✓                     | ✓   |
| Auto-regulating over input voltage range 78-131Vac               | ✓   | ✓   | ✓                 | ✓                     | ✓   |
| 110Vac & 24Vdc   | ✓   | ✓   | ✓                 | ✓                     | ✓   |
| Current Proved / Volt-free contacts Proved                       | ✓   | ✓   | ✓                 | ✓                     | ✓   |
| Non-Urgent alarm (FFF) reporting                                 | ✓   |     |                   |                       |     |
| Backward compatible with RRI & SSI                               | ✓   | ✓   | ✓                 | ✓                     | ✓   |
| Plug coupled   | ✓   | ✓   | ✓                 | ✓                     | ✓   |
| LRU for speedy exchange  | ✓   | ✓   | ✓                 | ✓                     | ✓   |
| Lightweight or conventional structure mounting                   | ✓   | ✓   | ✓                 | ✓                     | ✓   |
| Side-fitted wide-angle viewing sector for close range visibility | ✓   |     |                   |                       |     |
| 1 to 4 aspects; R/Y/G  | ✓   |     |                   |                       |     |
| Red/White Red/White PLS;<br>Red/Red LoS; White/White SUB         |     |     | ✓                 |                       |     |
| White/White; Green/White/White                                   |     |     |                   |                       | ✓   |
| Single or Double character - adjacent (SARI)                     |     |     |                   | ✓                     |     |
| Up to 10 display aspects (SARI); any alphanumeric                |     |     |                   | ✓                     |     |
| Up to 6 display aspects (MARI); any alphanumeric                 |     |     |                   | ✓                     |     |
| Display arrows / slash (SARI)                                    |     |     |                   | ✓                     |     |

## LIGHTWEIGHT STRUCTURE

Any user specified height up to 5.1m

### Structure

Post and Plinth, combined.

Height (A) is specified from the top of foundation/base of structure, to the horizontal centre line of the bottom aspect - nominally 3.3m or 5.1m.

VMS calculated for other user specified heights e.g. 4.1m.

VMS calculated for signal head combinations.

### SPT

Optional - cable hole

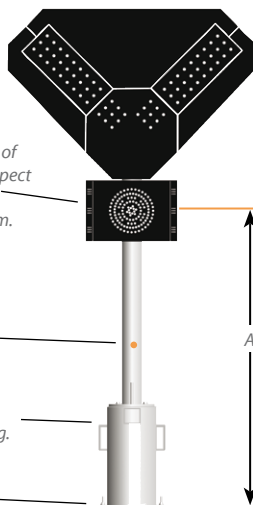
at user specified distance from foundation.

### Dis-Box mounting

Optional - side mounted brackets for dis-box mounting.

### Structure/Foundation

24mm holes spaced 340mm - 380mm.



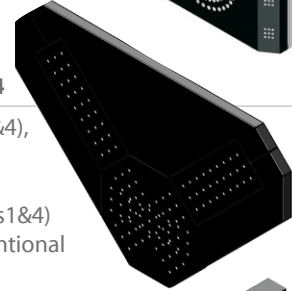
## CLS - 1 to 4 aspect

- Weight; 15Kgs (3), 20Kgs (4)
- 400 x 600mm (3); 935 x 600mm (4)
- LW Post or conventional mounting



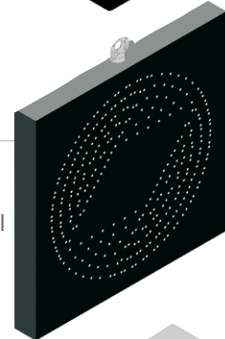
## PLJ - pos.1, 4, 1&4

- Weight; 20Kgs (1&4), 15Kgs (1/4)
- 1130mm (h) x 1650mm (w) - pos1&4)
- LW Post or conventional mounting



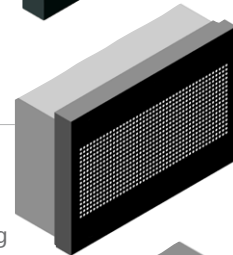
## BRS

- Weight; 15Kgs
- 600 x 600mm
- LW Post or conventional mounting



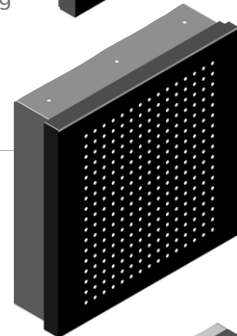
## MARI

- Weight; 15Kgs
- 500 x 350mm
- LW Post or conventional mounting



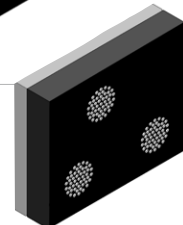
## SARI

- Weight; 20Kgs
- 600 x 600mm
- LW Post or conventional mounting



## PLS

- Weight; 15Kgs
- 430 x 350mm
- LW Post or conventional mounting



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# LIGHTWEIGHT RAIL SIGNAL SYSTEM



A totally new approach from VMS has produced a system of lightweight signals and structures that delivers both high performance and significant cost savings



Winner of the Network Rail Partnership Award 2011 for Innovation.

Complying to all standards and requirements, the lightweight signals and indicators – the 3 aspect CLS weighs only 15Kgs – require no routine maintenance and are backwards compatible.

They can be mounted on existing infrastructure or to VMS lightweight support structures that are quickly and simply installed without machinery. Structures are offered for ground mounting and any height up to 5.1m, for cess-mounting or inter-track applications.

### Primary drivers

- Reduced initial costs of installation and infrastructure
- Installed and maintained quickly and with minimum operational interference
- Installed / maintained without plant equipment using people and people-operated “tools”
- No routine maintenance
- Minimum footprint
- Minimum kinematic envelope for “inter-track” applications

### Scope

- Modular Programmes
- New Renewal Programmes
- Maintenance Replacements
- Lightweight or Conventional structures
- Straight & Offset structures
- Variable structure heights (up to 5.1m signal)

### Maintenance

- None expected (routine)

### Standards

- As mandated – test conventions, best practices and non-mandatory requirements

### Alignment

- Setting and beam checking without climbing

### Repair

- Minimal number of standard parts
- Easy transportation and handling

### Configuration

- Minimal number of part numbers / units
- Modular units to obtain configuration

### Performance

- 24Vdc and 110Vac
- Meet current LED light levels, readability, availability and life expectancy
- Backward compatible to existing and new system requirements
- Health Checks