

TCG 018: 2022

Register of

ITS Approved Products

Version: 2022

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Department
of Transport

TCG 018 ITS Approved Products

Foreword

This specification has been developed by Department of Transport (DoT) (Roads). It is one of a number of technical specifications, and associated standard drawings, which set out the requirements for roadside ITS devices, traffic signal equipment and other electrical equipment and associated devices and control systems.

This specification is intended for use in all relevant works undertaken by or on behalf of DoT (Roads).

DoT (Roads) Standard Drawings, Specifications and Guidelines are available for downloading from the VicRoads website:
<https://www.vicroads.vic.gov.au/business-and-industry/technical-publications/electrical-and-intelligent-transport-systems>

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Specification updates. DoT specifications and associated standard drawings are subject to periodic review. To keep the specifications up to date, amendments or new editions are issued as necessary. It is therefore important for users of DoT specifications to ensure that they have the latest version and associated amendments.

**Intelligent Transport Systems
60 Denmark Street Kew 3101**

ITS_Improvements_and_Standards@roads.vic.gov.au

Revision History

| Version | Revision | Date | Author | Description |
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| 2017 | 1.1 | April | ITS | Update |
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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This document provides a list of current, DoT (Roads) Approved ITS traffic signal, ITS and other on-road electrical products intended for use on various DoT (Roads) projects within the State of Victoria.

1.2 GENERAL

DoT (Roads) Product Compliance process aims to ensure that products used on DoT (Roads) projects are:

- Compliant with DoT (Roads) specifications
- Compliant with Australian Standards
- Compliant with legal, regulatory and statutory requirements
- Compatible with existing ITS systems and infrastructure

The Product Compliance process also provides:

- Efficiency and consistency in delivery
- Efficient procurement
- Reduction operating costs through consistency
- Lower system integration time and costs
- Reduced financial risk to DoT (Roads)
- Improved road safety

1.3 USE OF APPROVED PRODUCTS

Where available, only DoT (Roads) approved products shall be used on any DoT (Roads) project.

Where a new product type is being considered for use, DoT (Roads) shall be engaged to provide support and advice.

1.4 TYPES OF APPROVED PRODUCTS

The types of approval that may be granted to a product are as follows.

- a) **Type Approval** is applied where there is a specific DoT (Roads) specification or Australian Standard that directly applies to the product. Products that comply with the relevant specification or Australian Standard may be issued with a Certificate of Type Approval.
- b) **Product Acceptance** is applied where there is no specific DoT (Roads) specification or Australian Standard that directly applies to the product. Relevant requirements of related specifications and Australian Standards are typically applied to these types of products (e.g. EMC, environmental requirements, compatibility with existing systems, etc). Products that are considered to meet minimum requirements and have a potential benefit to DoT (Roads), may be issued with Product Acceptance.
- c) **Accepted for use** is applied to products that have been reviewed and tested against a specification or technical note and found to be compatible with DoT systems and suitable for use. Devices granted 'accepted for use' have not been subjected to a full evaluation that would apply to a product submitted for formal type approval.

Unless stated otherwise for individual devices, the devices listed in this document have been Type Approved by DoT (Roads) for use on DoT (Roads) projects within the state of Victoria.

SECTION 2 TRAFFIC SIGNAL EQUIPMENT

2.1 TRAFFIC SIGNAL CONTROLLERS

| | |
|-----------------------|--|
| Controller: | QTC3264 (also known as Hadron 3248) |
| Manufacturer: | Aldridge Traffic Systems |
| Type Approval Number: | PA 030 162 |

| | |
|--|-----------------|
| Version | VC5 |
| Latest Hardware Related Software (HRS) | V1.089 |
| Lantern voltage | LV |
| LV dimming | Voltage dimming |
| ELV dimming | N/A |

| | |
|--|--------------|
| Version | VC6.1 |
| Latest Hardware Related Software (HRS) | Not approved |
| Lantern voltage | Not approved |
| LV dimming | Not approved |
| ELV dimming | Not approved |

| | |
|--|--------------|
| Version | VC6.2 |
| Latest Hardware Related Software (HRS) | Not approved |
| Lantern voltage | Not approved |
| LV dimming | Not approved |
| ELV dimming | Not approved |

| | |
|-----------------------|-------------------------------------|
| Controller: | ATCS/4 |
| Manufacturer: | Aldridge Traffic Controllers |
| Type Approval Number: | PA 030 197 |

| Version | VC5 |
|--|-----------------------------|
| Latest Hardware Related Software (HRS) | C29V5R20S89 (29/11/2019) |
| Lantern voltage | LV |
| LV dimming | Voltage dimming |
| ELV dimming | N/A |
| XTTY Personality Module | PA 030 332 |

| Version | VC6.1 |
|--|-------------------------------|
| Latest Hardware Related Software (HRS) | C29V6.1R20S23 (07/11/2019) |
| Voltage | LV / ELV |
| LV dimming | Voltage dimming |
| ELV dimming | Dim by wire |

| Version | VC6.2 ⁽¹⁾ |
|--|-------------------------------|
| Latest Hardware Related Software (HRS) | C29V6.2R20S23 (11/10/2019) |
| Voltage | LV / ELV |
| LV dimming | Voltage dimming |
| ELV dimming | Dim by wire |

Notes

- (1) At this time, the ATCS/4 V6.2 controller has been granted 'acceptance for use'. This acceptance will be upgraded to formal type approval once TfNSW formally approves the controller.

| | |
|-----------------------|-------------------|
| Controller: | Eclipse |
| Manufacturer: | Tyco |
| Type Approval Number: | PA 030 206 |

Version**VC5**

| | |
|--|--------------------------|
| Latest Hardware Related Software (HRS) Suite 1.6.4 | C24V5R20 (12/06/2014) |
| Lantern voltage | LV / ELV |
| LV dimming | Voltage dimming |
| ELV dimming | N/A |
| Eclipse EB small controller | PA 030 266 |

Version**VC6.1**

| | |
|--|----------------------------|
| Latest Hardware Related Software (HRS) Suite 2.3.5 | C24V6.1R20 (17/01/2019) |
| Lantern voltage | LV |
| LV dimming | Voltage dimming |
| ELV dimming | Not approved |

Version**VC6.2**

| | |
|--|--------------|
| Latest Hardware Related Software (HRS) Suite 2.3.5 | Not approved |
| Lantern voltage | Not approved |
| LV dimming | Not approved |
| ELV dimming | Not approved |

2.2 OTHER

Rail crossing active advanced warning system controller

| | |
|------------------------------|------------|
| Aldridge Traffic Controllers | PA 030 232 |
|------------------------------|------------|

The following modem is supplied for use with DoT (Roads) traffic signal controllers as part of managed service contract.

SCATS modem

| | |
|--|-----|
| Telstra – UC-400T (supplied by Telstra under contract) | N/A |
|--|-----|

2.3 TRAFFIC SIGNAL LANTERNS

The following list of **type approved** traffic signal lanterns applies to 200mm lanterns only. For a list of controller/lantern compatibility, see the compatibility matrix in Appendix A.

Roundel

| | |
|---|------------|
| Aldridge Traffic Systems P/L – 5mm LED | PA 030 080 |
| Tyco P/L – 5mm LED | PA 030 221 |
| Kalington International P/L – HPSM LED | PA 030 237 |
| Aldridge Electrical Industries – 5mm and HPSM LED | PA 030 242 |
| Braums P/L – HPSM LED | PA 030 305 |
| Aldridge Traffic Systems P/L – HPSM LED | PA 030 333 |
| Tyco P/L – HPSM LED | PA 030 361 |

Arrow

| | |
|---|------------|
| Aldridge Traffic Systems P/L – 5mm LED | PA 030 075 |
| Tyco P/L – 5mm LED | PA 030 222 |
| Kalington International P/L – HPSM LED | PA 030 262 |
| Aldridge Electrical Industries – 5mm and HPSM LED | PA 030 243 |
| Braums P/L – HPSM LED | PA 030 306 |
| Aldridge Traffic Systems P/L – HPSM LED | PA 030 333 |
| Tyco P/L – HPSM LED | PA 030 361 |

U-Turn (U)

| | |
|---|------------|
| Aldridge Traffic Systems P/L – 5mm LED | PA 030 155 |
| Braums P/L – HPSM LED | PA 030 326 |
| Aldridge Electrical Industries – HPSM LED | PA 030 398 |

Tram (Tee)

| | |
|---|------------|
| Aldridge Traffic Systems P/L – 5mm LED | PA 030 156 |
| Braums P/L – HPSM LED | PA 030 328 |
| Aldridge Electrical Industries – HPSM LED | PA 030 396 |

Bus (B)

| | |
|---|------------|
| Aldridge Traffic Systems P/L – 5mm LED | PA 030 156 |
| Braums P/L – HPSM LED | PA 030 328 |
| Aldridge Electrical Industries – HPSM LED | PA 030 404 |

Emergency (E)

| | |
|---|------------|
| Braums P/L – HPSM LED | PA 030 330 |
| Aldridge Electrical Industries – HPSM LED | PA 030 397 |

Bicycle

| | |
|---|------------|
| Aldridge Traffic Systems P/L – 5mm LED | PA 030 194 |
| Braums P/L – HPSM LED | PA 030 318 |
| Tyco P/L – HPSM LED | PA 030 361 |
| Aldridge Electrical Industries – HPSM LED | PA 030 403 |

Pedestrian

| | |
|---|------------|
| Aldridge Traffic Systems P/L – 5mm LED | PA 030 079 |
| Tyco P/L – 5mm LED | PA 030 223 |
| Kalington International P/L – HPSM LED | PA 030 263 |
| Aldridge Electrical Industries P/L – 5mm and HPSM LED | PA 030 247 |
| Braums P/L – HPSM LED | PA 030 307 |
| Tyco P/L – HPSM LED | PA 030 361 |

Pedestrian countdown timer – 3 aspect

| | |
|--|------------|
| Aldridge Traffic Systems P/L – 5mm LED | PA 030 295 |
|--|------------|

2.4 TRAFFIC SIGNAL HARDWARE**Target board**

| | |
|--|------------|
| Aldridge Electrical Industries P/L - Metal | PA 030 250 |
| Braums P/L – Metal | PA 030 311 |
| Kalington International P/L – Metal | PA 030 339 |
| Aldridge Traffic Systems P/L - Metal | PA 030 191 |

Visor

| | |
|---|-------------|
| Aldridge Traffic Systems P/L – Lantern type 1, 2 and 3 | N/A |
| Aldridge Traffic Systems P/L – Pedestrian | PA 029 5030 |
| Tyco P/L – Lantern type 1, 2, 3 and pedestrian | PA 029 5116 |
| Braums P/L – Lantern type 1, 2, 3 and pedestrian | PA 030 305 |
| Kalington International P/L – Lantern type 1, 2, 3 and pedestrian | PA 030 340 |

Lantern mounting bracket

| | |
|--|------------|
| Aldridge Traffic Systems P/L – 2 and 4 way | N/A |
| Aldridge Electrical Industries P/L – 2 and 4 way | PA 030 244 |
| Braums P/L – 2 and 4 way | PA 030 315 |
| Tyco – 2 and 4 way | PA 030 302 |

Upper mounting assembly

| | |
|---|------------|
| Aldridge Traffic Systems P/L (including dual terminal version VL248) | N/A |
| Aldridge Electrical Industries P/L | PA 030 252 |
| Tyco P/L | PA 030 308 |
| Braums P/L | PA 030 323 |

Terminal assembly – 51 way dual terminal

| | |
|---|------------|
| Weidmuller, rail and terminal assembly (MA, JUMA & JUP - part number 7940127827. UMA – part number 7940127829) | PA 030 425 |
|---|------------|

Pedestrian detector (push button)

| | |
|------------------------------------|------------|
| Aldridge Traffic Systems P/ | PA 030 006 |
| Aldridge Electrical Industries P/L | PA 030 248 |
| Braums P/L | PA 030 322 |

Audio tactile

| | |
|--|-------------|
| Tyco P/L – Driver | PA 029 5087 |
| Quick Turn Circuits P/L – Driver | PA 029 5123 |
| Aldridge Traffic Systems P/L – Driver board | PA 030 003 |
| Aldridge Electrical Industries P/L – Driver and transducer | PA 030 253 |
| Braums P/L – Driver and transducer | PA 030 321 |

2.5 TRAFFIC SIGNAL POLES**Pedestal (2A, 2B and Type C)**

| | |
|---|-------------|
| Northsteel P/L – 2A | PA 029 5028 |
| Skinner Engineering P/L – 2A, 2B and Type 3 | PA 029 5047 |
| Wanbanna P/L - 2A, 2B and Type 3 | PA 029 5126 |
| Lanez Engineering P/L – 2A | PA 030 048 |
| Lanez Engineering P/L – 2B | PA 030 049 |
| Coslee Heavy Metal Fabricators P/L – 2A and 2B | PA 030 083 |
| AJ Williams Group P/L – Raiser bracket for 3 aspect lantern | PA 030 100 |
| Ingal EPS P/L – 2B | PA 030 212 |
| Ideal Engineering Construction P/L – 2A and 2B | PA 030 287 |

Coslee Heavy Metal Fabricators P/L – Type 3

PA 030 411

Mast arm (MA)

| | |
|--------------------------------------|------------|
| Ingal EPS P/L – Standard clearance | PA 030 092 |
| Ingal EPS P/L – Low clearance | PA 030 093 |
| Coslee Heavy Metal Fabricators P/L - | PA 030 202 |

Joint use mast arm (JUMA)

| | |
|------------------------------------|------------|
| Ingal EPS P/L – Standard clearance | PA 030 094 |
| Ingal EPS P/L – Low clearance | PA 030 095 |
| Coslee Heavy Metal Fabricators P/L | PA 030 201 |

Joint use pole (JUP)

| | |
|--|------------|
| Ingal EPS P/L – 8m, 11m and 13.5m | PA 030 091 |
| Coslee Heavy Metal Fabricators P/L – 8m, 11m and 13.5m | PA 030 182 |

Flashing pedestrian crossing pole

| | |
|------------------------------------|------------|
| Ingal EPS P/L | PA 030 200 |
| Taperline Australia P/L | PA 030 185 |
| Coslee Heavy Metal Fabricators P/L | PA 030 392 |

2.6 TRAFFIC SIGNAL CABLE**Multicore power cable**

| | |
|--|------------|
| Olex Cable P/L – 51 core | PA 030 087 |
| Olex Cable P/L – 13 core | PA 030 088 |
| General Cable P/L – 19, 29 and 51 core | PA 030 149 |
| Madison Technologies P/L – 13, 19, 29 and 51 core | PA 030 258 |
| CMI Electrical Products P/L – 13, 19, 29 and 51 core | PA 030 278 |
| Detector Loop Services P/L – 13, 19, 29 and 51 core | PA 030 270 |
| Eltech Industries P/L – 13, 19, 29 and 51 core | PA 030 312 |
| Electra Cables P/L – 13, 19, 29 and 51 core | PA 030 324 |
| Bambach Wire and Cables P/L – 13, 19, 29 and 51 core | PA 030 334 |

SECTION 3 UPS

This section details **type approved**, stand-alone uninterruptible power supplies for use with roadside devices such as traffic signal controllers.

Uninterruptible power supplies

| | |
|------------------------------|------------|
| Aldridge Traffic Controllers | PA 030 228 |
| CPS National | PA 030 229 |
| Tyco | PA 030 327 |

SECTION 4 DETECTION

4.1 INDUCTIVE LOOPS AND ASSOCIATED CABLES

Pre-formed inductive loop

| | |
|--|------------|
| Detector Loop Services – Ezy Loop Pre-formed inductive detector loop | PA 030 064 |
| Rose Civil – Pre-formed inductive detector loop | PA 030 245 |
| Juvana P/L – Patriot pre-formed inductive detector loop | PA 030 358 |

Detector feeder cable

| | |
|--|------------|
| Olex Cable P/L – 1 pair (2 core) | PA 030 089 |
| General Cable P/L – 1 pair (2 core) | PA 030 150 |
| Bambach Wire and Cables P/L – 1 pair (2 core) | PA 030 216 |
| Detector Loop Services P/L – 3 and 4 pair (6 and 8 core) | PA 030 241 |
| Madison Technologies P/L – 1 pair (2 core) | PA 030 259 |
| Detector Loop Services P/L – 1 pair (2 core) | PA 030 286 |
| Eltech Industries P/L – 1 pair (2 core) | PA 030 313 |
| Electra Cables P/L – 1 and 3 pair (2 and 6 core) | PA 030 325 |

Detector loop cable

| | |
|-----------------------------|------------|
| General Cable P/L | PA 030 151 |
| Bambach Wire and Cables P/L | PA 030 217 |
| Madison Technologies P/L | PA 030 260 |
| Eltech Industries P/L | PA 030 314 |
| Electra Cable P/L | PA 030 325 |

4.2 PEDESTRIAN DETECTION

The following detectors have been **accepted for use** for detection of pedestrians at signalised pedestrian crossings.

| Detector | Use |
|--|---|
| AGD P/L – AGD 326 | Pedestrian on-crossing detector for PUFFIN crossings |
| AGD P/L – AGD 645 (pedestrian occupancy detector) | Pedestrian occupancy detector for PUFFIN crossings. (Can also be used for stop-line vehicle presence detection where loops cannot be installed). |

4.3 VEHICLE DETECTION

This section has been included for possible future use.

4.4 OVERHEIGHT VEHICLE DETECTION

The following detectors have been **accepted for use** for detection of over height vehicles.

Over height vehicle detector

SICK – HISIC450

PA 030 426

4.5 BLUETOOTH DETECTOR STATION

The following Bluetooth Detector Stations (BDS) have been approved for use on AddInsight and tested and considered **accepted for use** within DoT (Roads) network.

Bluetooth detector station (BDS)

Model

| | |
|-------|----------------------|
| HMI | GeckoAI |
| Sage | AddInsight OMNIA |
| Sage | AddInsight v3.1 |
| Tyco | PCP-100 (3G) |
| UHS | PC-400-BM |
| Opito | Opito AddInsight BDS |

SECTION 5 PITS AND CONDUITS

5.1 PITS

Cable pit - 600mm

| | |
|---|-------------|
| Linpac polycast P/L – corrugated pit former | PA 029 5109 |
| Ausmar Industries P/L – pit former | PA 030 001 |
| BVCI P/L – pit former | PA 030 284 |
| BVCI P/L – corrugated pit former | PA 030 292 |
| Access Covers Australia P/L – corrugated pit former | PA 030 369 |
| Access Covers Australia P/L – Pit riser (for angled FSL's up to 20 degrees) | PA 030 413 |

Cable pit – 750mm

| | |
|---|------------|
| Access Covers Australia P/L – corrugated pit former | PA 030 367 |
| Convic Australia P/L – corrugated pit former | PA 030 371 |

Cable pit lid and frame – 600mm

| | |
|--|-------------|
| Webforge (Vic) P/L | PA 029 5124 |
| Milnes / Gatic P/L – Concrete core infill | PA 029 5112 |
| S.V.C. Products P/L | PA 029 5121 |
| S.V.C. Products P/L – Concrete core infill | PA 029 5111 |
| Gatic P/L – steel | PA 030 065 |
| EJ (formerly Havestock) P/L – steel | PA 030 153 |
| Hygrade Water P/L | PA 030 261 |
| Aco Polycrete P/L | PA 030 208 |
| BVCI P/L – Cast iron | PA 030 293 |
| Access Covers Australia P/L – Cast iron | PA 030 230 |
| Convic Australia P/L – Composite | PA 030 354 |
| Access Covers Australia P/L – Cellular steel | PA 030 388 |
| Yeti Civil Products | PA 030 409 |

Detector pit

| | |
|---|------------|
| Linpac Polycast P/L – plastic pit and lid | PA 030 002 |
| BVCI P/L – plastic pit, aluminium lid | PA 030 084 |
| South Eastern Industrial Supplies P/L | PA 030 211 |
| Hygrade Water P/L | PA 030 264 |
| BVCI P/L – plastic pit, cast iron lid | PA 030 281 |

5.2 CONDUITS

The following conduit types have been **accepted for use** in the sizes indicated below and as specified in individual specifications and contract documents.

Electrical conduit - Orange

| | Size (mm) |
|--|--------------|
| Heavy duty, solid wall, UPVC | 150 |
| | 100 |
| | 63 |
| | 50 |
| | 32 |
| HDPE continuous | 125 OD |
| Heavy duty, multilayer, solid wall (inner and outer layers using new PVC compound and an inner layer using recycled PVC material). | 100 |

Communications conduit - White

| | Size (mm) |
|------------------------------|--------------|
| Heavy duty, solid wall, UPVC | 100 |
| | 50 |
| HDPE continuous | 110 OD |
| Telstra conduit | 20 |

SECTION 6 FOUNDATIONS

Rag bolt assembly for pole

| | |
|---|-------------|
| M.T.M Controls (Aust) P/L – Commercial grade (Class 4.6) | PA 029 5008 |
| Lanez Engineering P/L – Commercial grade (Class 4.6) | PA 030 046 |
| Lanez Engineering P/L – High strength (Class 8.8) | PA 030 047 |
| Lanez Engineering P/L | PA 030 059 |
| South Eastern Industrial Supplies P/L – Commercial grade (Class 4.6) | PA 030 164 |
| South Eastern Industrial Supplies P/L – High strength (Class 8.8) | PA 030 165 |
| CSW Products P/L – Commercial grade (Class 4.6) | PA 030 298 |
| CSW Products P/L – High strength (Class 8.8) | PA 030 299 |
| Ideal Engineering P/L - Commercial grade (Class 4.6) and High strength (Class 8.8) | PA 030 288 |
| Coslee Heavy Metal Fabricators P/L - Commercial grade (Class 4.6) and High strength (Class 8.8) | PA 030 348 |
| Wanbanna P/L - Commercial grade (Class 4.6) and High strength (Class 8.8) | PA 030 372 |

Reinforcing cage for bored pile foundations

| | |
|--|-------------|
| David Lewis P/L – 2m | PA 029 5101 |
| Lanez Engineering P/L – 3m | PA 030 045 |
| South Eastern Industrial Supplies P/L – 3m | PA 030 163 |
| Ideal Engineering P/L – 3m | PA 030 289 |
| Coslee Heavy Metal Fabricators P/L – 3m | PA 030 350 |
| M.A.S.T. Fabrications P/L – 3m | PA 030 356 |
| Wanbanna P/L – 3m | PA 030 373 |
| Access Covers P/L – 3m | PA 030 374 |

Standard cabinet (controller and universal cabinets)

| | |
|------------------------------------|------------|
| Lanez Engineering P/L | PA 030 059 |
| Ideal Engineering P/L | PA 030 290 |
| Coslee Heavy Metal Fabricators P/L | PA 030 349 |

SECTION 7 ROAD LIGHTING

7.1 LUMINAIRES

Luminaire – Road Lighting LED

Optics

| Luminaire – Road Lighting LED | Optics | |
|--|------------------------------|------------|
| Traffic technologies P/L – L1 (ALS108), L2 (ALS162) and L4 (ALS216) | T2* T3* T5* (standard) | PA 030 272 |
| Sylvania-Schröder – RoadLED L1 (100W 4K VR2 CO PEBN7 9006 aeroscreen), L2 (200W 4K VR2 CO PEBN7 9006 aeroscreen),L3 (300W 4K VR2 CO PEBN7 9006 aeroscreen) | | PA 030 357 |

*T2 = side throw optics. T3 = Forward throw optics. T5 = combination of T2 and T3

The following tunnel and high-mast luminaires have been granted **Product Acceptance**.

Luminaire – Tunnel LED

| | |
|---|------------|
| Traffic Technologies P/L - T-LED, 38W, 75W, 145W, 185W, 220W | PA 030 357 |
| Traffic Technologies P/L – FLUD, FLUD-M, 150W, 200W, 240W, 300W | PA 030 380 |
| Sylvania-Schröder – Pro LED, 127W, 150W, 180W, 255W and 320W | PA 030 393 |
| Traffic Technologies P/L – S-LED | PA 030 415 |

Luminaire – High Mast LED

| | |
|---|------------|
| Traffic Technologies P/L – H-LED, 260W, 350W, 495W and 690W | PA 030 390 |
| Traffic Technologies P/L – E-LED, High Mast Flood | PA 030 391 |

7.2 POLES AND BRACKETS

Slip-base pole

| | |
|---|------------|
| Coslee Heavy Metal Fabricators P/L – 11m | PA 030 085 |
| Coslee Heavy Metal Fabricators P/L – 13.5m | PA 030 099 |
| SafeRoads P/L – 8.5m, 11m and 13.5m | PA 030 234 |
| Coslee Heavy Metal Fabricators P/L – 8.5 | PA 030 086 |
| Ingal EPS P/L – 8.5m, 11m and 13.5m | PA 030 122 |
| A D Coote & Co P/L – 8.5m, 11m and 13.5m | PA 030 124 |
| Taperline Australia P/L – 8.5m, 11m and 13.5m | PA 030 126 |
| CSP Pacific P/L – 8.5m, 11m and 13.5m | PA 030 271 |

Impact absorbing pole

| | |
|---|------------|
| Coslee Heavy Metal Fabricators P/L – 8.5m and 11m | PA 030 105 |
| Ingal EPS P/L – 8.5m and 11m | PA 030 123 |
| A. D. Coote & Co. P/L – 8.5m and 11m | PA 030 125 |

| | |
|--|------------|
| Saferoads P/L – 8.5m and 11m (direct buried) | PA 030 227 |
| Ingal EPS P/L – 8.5m and 11m (direct buried) | PA 030 274 |

Mid-hinge pole

| | |
|--|------------|
| Coslee Heavy Metal Fabricators P/L – 10m | PA 030 183 |
|--|------------|

Lighting bracket

| | |
|---|------------|
| Lanez Engineering P/L – Type 1 and Type 2 | PA 030 148 |
| Coslee Heavy Metal Fabricators – Type 1 | PA 030 171 |
| Coslee Heavy Metal Fabricators – Type 2 | PA 030 172 |
| Dooza Engineering P/L – Type 1 | PA 030 177 |
| Dooza Engineering P/L – Type 2 | PA 030 178 |
| Sesco Engineering P/L – Type 1 | PA 030 179 |
| Sesco Engineering P/L – Type 2 | PA 030 180 |
| Interpole P/L – Type 1 | PA 030 204 |
| Ingal EPS P/L – Type 1 and Type 2 | PA 030 210 |
| Saferoads P/L – Type 1 and Type 2 | PA 030 233 |
| CSP Pacific P/L – Type 1 and Type 2 | PA 030 279 |

7.3 CABLE JOINTS FOR LIGHTING

The following cable joints have been **accepted for use** for jointing trunk cables to lighting pole cables in an approved cable pit.

Dome style joint

(For use with orange circular and SDI cables only)

| | |
|---|------------|
| GV Kinsman P/L - VJ4CR-2.52CET - 4C+E Orange circ. 16//25/35mm ² and 2.5 ² TPS, VJ4CR-62CET - 4C+E Orange circ. 16/25/35mm ² and 6mm ² power authority cable, VJ3SDI-2.5CET – 16/25/35mm ² 1C XLPE/SDI and 2.5mm ² TPS and VJ3SDI-6CET – 16/25/35mm ² 1C XLPE/SDI and 6mm ² power authority cable | PA 030 364 |
| Velnah P/L - JEDL223511611 – Single Phase and JEDL423511611 – Three Phase | PA 030 382 |

Other (commercially available connectors)

(For use with XLPE cables only)

| | |
|--|-----|
| Sicame Australia P/L – Piranha MUCI series | N/A |
|--|-----|

SECTION 8 ROADSIDE CABINETS

Electrical distribution cabinet

| | |
|---|------------|
| Butler Electrics P/L – Type 1 | PA 030 120 |
| Logix Engineering P/L – Type 1, Type 2 and Type 3 | PA 030 282 |
| Butler Electrics P/L – Type 2 and Type 3 | PA 030 285 |
| BRAUMS – Type 2 | PA 030 427 |

ITS field cabinet – ground mounted

| | |
|--|------------|
| Logix Engineering P/L -Single (3 door) and double (6 door) | PA 030 239 |
| Hi-Lux Technical Services P/L -Single (3 door) and double (6 door) | PA 030 362 |
| SAGE Automation P/L -Single (4 door) and double (6 door) | PA 030 363 |
| B&R Enclosures Pty Ltd -Single (3 door) | PA 030 377 |
| NHP Electrical Engineering Products P/L -Single (3 and 4 door) | PA 030 385 |

ITS field cabinet – pole mounted

| | |
|---|------------|
| SAGE P/L | PA 030 363 |
| B&R Enclosures Pty Ltd | PA 030 377 |
| NHP Electrical Engineering Products P/L | PA 030 385 |
| Logix Engineering P/L | PA 030 414 |

Universal roadside cabinet

| | |
|-----------------------|------------|
| Logix Engineering P/L | PA 030 251 |
|-----------------------|------------|

SECTION 9 ELECTRONIC SIGNS

The products listed below are standard, commonly used, electronic signs. The typical electronic sign uses LED technology as an illuminating light source.

Electronic speed limit sign (ESLS)

| | |
|--|------------|
| Hilux Technical Services P/L – discrete character 2 speed (NMS 1 compatible) | PA 030 167 |
| Aldridge Traffic Systems P/L – Discrete character 2 speed (NMS 2 compatible) (and matrix version, non NMS compatible) | PA 030 276 |

Lane use management sign (LUMS) (STREAMS compatible)

| | |
|---------------------------------|------------|
| HMI Technologies – B and C size | PA 030 336 |
| Compusign Systems P/L – C size | PA 030 346 |

Ramp control / metering sign (RCS) (STREAMS compatible)

| | |
|---|------------|
| Hi-Lux Technical Services P/L – RC1, RC2 and RC3A | PA 030 188 |
| HMI Technologies P/L - RC1, RC2 and RC3A | PA 030 351 |
| Compusign Systems P/L - RC1, RC2, RC3A and RC3C | PA 030 366 |

No right/left turn sign

| | |
|--|------------|
| Hi-Lux Technical Services P/L – NRT / NLT | PA 030 189 |
| Aldridge Electrical Industries P/L – NRT / NLT | PA 030 195 |
| Aldridge Traffic Systems – NRT / NLT | PA 030 277 |

Variable message sign (VMS)

For future use



SECTION 10 CCTV

The products listed below have been tested and found to be compatible with DoT (Roads) CCTV network.

They are **accepted for use** on DoT (Roads) CCTV network.

| Brand | Models Accepted | |
|---------------------|---|------------|
| Bosch | MIC IP Starlight 7000i | PA 030 391 |
| Axis Communications | Q6075-E Q6045-E-MkII (discontinued) Q6055-E-IP (discontinued) | PA 030 395 |

SECTION 11 NETWORK COMMUNICATIONS DEVICES

The following network communication devices have been tested, found to be compatible with DoT (Roads) systems, and considered **accepted for use** within DoT (Roads) network.

STREAMS field processor

Model

Transmax

FP.IT-08

Backbone router

Model

Cisco

ASR 9006

Access switch

Model

Cisco

IE-4000

System Controller

Model

Eaton

SC200

4G modem – General ITS devices

Model

For future use

4G Modem - ESLS NMS2 compatible

Model

eSAM 4G Industrial Router
(Adapted for use with the ATS NMS2 compatible ESLS)

Intercel eSAM

APPENDIX A CONTROLLER/LANTERN COMPATIBILITY

The following compatibility matrix provides details of the compatibility of traffic signal controllers and traffic signal lanterns.

Only combinations shown on the matrix below shall be installed in the field.

| Controller | LV lanterns (voltage dimming) | ELV lanterns (voltage dimming) | ELV lanterns (DBW) |
|--------------------|---|-----------------------------------|---|
| VC4 and VC5 | | | |
| ATSC4 | ATS AEI BRAUMS Kalington Tyco | N/A | N/A |
| Eclipse | ATS AEI BRAUMS Kalington Tyco | N/A | N/A |
| QTC | ATS AEI BRAUMS Kalington Tyco | N/A | N/A |
| VC6.1 | | | |
| ATSC4 | ATS AEI BRAUMS Kalington Tyco | N/A | BRAUMS (conditional acceptance) ATS (conditional acceptance) |
| Eclipse | ATS AEI BRAUMS Kalington Tyco | N/A | N/A |
| QTC | N/A | N/A | N/A |
| VC6.2 | | | |
| ATSC4 | ATS AEI BRAUMS Kalington Tyco | N/A | BRAUMS (conditional acceptance) ATS (conditional acceptance) |
| Eclipse | N/A | N/A | N/A |
| QTC | N/A | N/A | N/A |