

Certificate of Acceptance

PA05/07241

Manufacturer:
Haide Technologies Ltd

Issue : 2
Valid From : 24-05-21

LEMUR AG15

Product Description

LEMUR-AG15 is a thermal management system that provides a highly efficient barrier to the effects of solar gain on apparatus cases and other enclosures.

Pre-cut, panels can be applied to any type of enclosure, location case, cabinet or housing that is being affected by solar gain.

Product Image



Scope of Acceptance

Full Acceptance:

LEMUR-AG15 shall be used as an enclosure cooling kit as per the conditions described on the following pages.

Trial Acceptance:

Four trackside equipment buildings are to be clad in LEMUR-AG15 as part of a trial to exploit the properties of LEMUR on large enclosures. The buildings range in size from 7m to 13m long, c.3m wide x c.3m tall. The buildings are equipped with foam insulation and forced air cooling to provide a suitable working environment for the installed equipment. All of the selected sites have experienced heat related failure/alarms at least once a year, over the past 3 years.

Test site locations:

T3650 Chelford Loop REB
T3651 Manchester Piccadilly Station REB
T3652 Tyseley Station PSP
T3653 Upper Trinity Street Bordesley PSP

Network Rail Acceptance Panel (NRAP) hereby authorises the product above for use and trial use on railway infrastructure for which Network Rail is the Infrastructure Manager under the ROGS regulations.

Reviewed by:



Steven Rennolds
Product Acceptance Specialist

Authorised by:



Jerry Morling BEng MSc CEng MIET, MIRSE
Professional Head Signalling

Certificate of Acceptance

PA05/07241

Manufacturer:
Haide Technologies Ltd

Issue : 2
Valid From : 24-05-21

Specific Conditions

The following Conditions are specific to the approved product/s contained within this Certificate. These conditions must be adhered to in addition to the Network Rail General Conditions contained within the "General Terms and Conditions" section. Failure to adhere to these conditions may result in the withdrawal or suspension of Acceptance of some, or all of the items contained within the accepted configuration.

Manufacturer

- 1) Refer to General Terms and Conditions at the end of this document
- 2) A FRACAS shall be kept throughout the life of the product and made available to the Lead Engineer upon request.

User

- 1) Installation as per the manufactures documentation.
- 2) All identification/ warning stickers / markings on the apparatus case / metal enclosure **must** be replaced following application of LEMUR-AG15.
- 3) Specific limitations when installing LEMUR-AG15:
 - i) LEMUR must not be installed in the rain.
 - ii) LEMUR cleaning spray must be used on every installation.
- 4) Where LEMUR-AG15 is not subjected to free-falling rain (e.g. under trees / station canopies) and where it is located in a dirty environment with high levels of contamination (e.g. near quarries or steel works), cleaning may be required.

Product Configuration

Complete Assembly

Part No.	Description	Catalogue No.
T3615	Henry Williams loc+ - Lemur Pattern	0086/001991
T3570	Henry Williams Full loc - Lemur Pattern	0086/001992
T3571	Henry Williams Half loc - Lemur Pattern	0086/001993
T3616	Henry Williams T600 - Lemur Pattern	0086/001994
T3584	TFL Wide Full loc - Lemur Pattern	0086/001995
T3649	TFL Wide Half loc - Lemur Pattern	0086/020947
T3572	TFL Full loc - Lemur Pattern	0086/001996
T3573	TFL Half loc - Lemur Pattern	0086/001997
T3617	NR Full loc - Lemur Pattern	0086/001998
T3618	NR Half loc - Lemur Pattern	0086/001999
T3574	ICEE-TEH-Case - Lemur Pattern	0086/002000
T3619	GEC Full loc Wessex - Lemur Pattern	0086/002001
T3620	GEC Half loc Wessex - Lemur Pattern	0086/002002
T3621	GEC Full loc Liverpool - Lemur Pattern	0086/002003
T3622	GEC Half loc Liverpool - Lemur Pattern	0086/002004
T3623	1970's loc Summit Tunnel - Lemur Pattern	0086/002005
T3648	Rock Ferry Template - Lemur Pattern	0086/020945
T3647	Louver - Lemur Pattern	0086/020946
T3624	Siemens Westlock TFL - Lemur Pattern	0086/002006
T3625	Siemens Westlock MK2 - Lemur Pattern	0086/002007
T3626	Thales Full Ace Case - Lemur Pattern	0086/002008

Certificate of Acceptance

PA05/07241

Manufacturer:
Haide Technologies Ltd

Issue : 2
Valid From : 24-05-21

Part No.	Description	Catalogue No.
T3627	TPWS Small - Lemur Pattern	0086/002009
T3628	TPWS Medium - Lemur Pattern	0086/002010
T3629	TPWS Large - Lemur Pattern	0086/002011
T3592	Impedance bond B3 3000 - Lemur Pattern	0086/002012
T3630	Impedance bond WH3 - Lemur Pattern	0086/002013
T3631	Track tuned unit Ebi Track cover - Lemur Pattern	0086/002014
T3632	Technocover Full loc - Lemur Pattern	0086/002015
T3633	Technocover Half loc - Lemur Pattern	0086/002016

Installation Tools

Part No.	Description	Catalogue No.
T3575	Installation-kitlite- Lemur Haide Technologies	0086/002017
T3576	Installation-kitpro- Lemur Haide Technologies	0086/002018
T3578	LEMUR Cleaning spray 1L	0086/002019

Spares

Part No.	Description	Catalogue No.
T3577	Spares kit – Lemur Haide Technologies	0086/002020

Assessed Documentation

Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
TECH 200	NR CRR LEMUR-AG15 PA05/07241	1	13/11/2020	1
TECH 201	1 Case Study - LJMU Thermal Testing 1 of 5	1	13/11/2020	1
TECH 202	2 Case Study - Summit Tunnel - 2 of 5	1	13/11/2020	1
TECH 203	3 Case Study - Level Crossing XNET - 3 of 5	1	13/11/2020	1
TECH 204	4 Case Study - Vandalism - 4 of 5	1	13/11/2020	1
TECH 205	5 Case Study - Glare - 5 of 5	1	13/11/2020	1
TECH 199	PA05-07241 PA-DFR cover sheet	5	13/11/2020	1
	PA05/07241 LEMUR-AG15 zip file			
	1. Network rail			
DK-LJMU-001	Atkins loc heat profiles	1	13/11/2020	1
-	NR Challenge Statement - Environment	-	13/11/2020	1
DK-NR-001	NR Hot Weather review 2017/18 2018/19	1	13/11/2020	1
DK-NR-002	HW Study in to temperature of location case	1	13/11/2020	1
NR-NB -178	NR Notice Board 178 Apparatus case cooling	1	13/11/2020	1
	2. Standards			
-	BS EN 50125:3 – 2003	1	13/11/2020	1
-	BS EN 60812 – 2006	1	13/11/2020	1
-	MIL-STD 810F	1	13/11/2020	1
	3. Data Sheets			
Indg 143	HSE – Manual Handling at Work – indg143	1	13/11/2020	1
ATL8590WL703/DA/AB	LEMUR AG15 Datasheet	1	13/11/2020	1
	4. Test Data			
TECH 172	LEMUR-AG15 Dielectric Test	1	13/11/2020	1
TECH 206	LEMUR-AG15 Gloss Test	1	13/11/2020	1

Certificate of Acceptance

PA05/07241

Manufacturer:
Haide Technologies Ltd

Issue : 2
Valid From : 24-05-21

Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
TECH 207	Thermal Test – LEMUR-AG15	1	13/11/2020	1
TECH 208	Thermal Test – LEMUR-AG15 (dirty)	1	13/11/2020	1
5. GA's				
D1794	HW full loc LEMUR-AG cut pattern	1	13/11/2020	1
D1810	HW half loc LEMUR-AG cut pattern	1	13/11/2020	1
D1808	TFL Wide loc LEMUR-AG cut pattern	1	13/11/2020	1
D1809	TFL full loc LEMUR-AG cut pattern	1	13/11/2020	1
D1816	TFL half loc LEMUR-AG cut pattern	1	13/11/2020	1
D1837	1970's full loc LEMUR-AG cut pattern	1	13/11/2020	1
D1814	NR full loc LEMUR-AG15 cut pattern	1	13/11/2020	1
D1815	NR half loc LEMUR-AG15 cut pattern	1	13/11/2020	
D1811	Track tuned unit Ebi Track cover - Lemur pattern	1	13/11/2020	1
D1812	B3 3000 Impedance bond LEMUR-AG15 cut pattern	1	13/11/2020	1
D1813	WH3 Impedance bond LEMUR-AG15 cut pattern	1	13/11/2020	1
6. O&M				
TECH 182	Declaration of Conformity	1	13/11/2020	1
TECH 173	LEMUR-AG15 iss1 cw	1	13/11/2020	1
TECH 183	1 Video installation guide complete	1	13/11/2020	1
TECH 196	2 Video installation guide overview DD	1	13/11/2020	1
TECH 209	3 Video installation guide overview DK	1	13/11/2020	1
TECH 185	4 Video vandalism – Permanent Marker	1	13/11/2020	1
TECH 190	5 Video vandalism – Spray Paint	1	13/11/2020	1
7. ATL Certification				
FS 571915	ATL ISO9001	1	13/11/2020	1
2893	ATL RISQS certificate	1	13/11/2020	1
TECH 193	Declaration of conformity	1	13/11/2020	1
TECH 195	Service Life Statement	1	13/11/2020	1
8. Design for Reliability				
TECH 189	DFR Periodic – LEMUR-AG15	1	13/11/2020	1
TECH 186	QFD LEMUR-AG15	1	13/11/2020	1
TECH 181	LEMUR-AG15 Design FMEA	1	13/11/2020	1
TECH 192	LEMUR-AG15 DFR Flowchart	1	13/11/2020	1
TECH 187	LEMUR-AG15 Functional Block Diagram	1	13/11/2020	1
TECH 194	LEMUR-AG15 Manufacturing FMEA	1	13/11/2020	1
TECH 188	LEMUR-AG15 Product List v2	1	13/11/2020	1
TECH 184	LEMUR-AG15 Q&A	1	13/11/2020	1
TECH 209	LEMUR-AG15 RAM Plan & DRACAS	1	13/11/2020	1
OP02	OP02 Design – Flow Chart Design & Development	1	13/11/2020	1
OP05	OP05 Travel Card Process Control – Issuing Travel Card	1	13/11/2020	1
OP12	OP12 Design Processing of Travel Card	1	13/11/2020	1
OP61	OP61 LEMUR-AG15 Manufacturing Flowchart	1	13/11/2020	1
OP62	OP62 LEMUR-AG15 LOC Installation Flowchart	1	13/11/2020	1
9. Images				

Certificate of Acceptance

PA05/07241

Manufacturer:
Haide Technologies Ltd

Issue : 2
Valid From : 24-05-21

Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
TECH 198	HW Half loc 1	1	13/11/2020	1
	HW Half loc 2	1	13/11/2020	1
	HW Full loc Crewe	1	13/11/2020	1
-	TFL Wide loc Blackpool	1	13/11/2020	1
-	HW Full loc Liverpool	1	13/11/2020	1
-	HW full loc Summit Tunnel	1	13/11/2020	1
-	TFL Full loc Norwich	1	13/11/2020	1
-	Hi Viz LEMUR circa 6m	1	13/11/2020	1
-	Hi Viz LEMUR close	1	13/11/2020	1
-	LEMUR loc Overlay	1	13/11/2020	1
-	LEMUR loc Peel	1	13/11/2020	1
-	LEMUR Under A Spot Light	1	13/11/2020	1
TECH 191	LEMUR Glue Test (video)	1	13/11/2020	1
TECH 197	LZ Cutter LEMUR-AG15 (video)	1	13/11/2020	1

1

Manuals and Training Materials

Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
TECH 173	LEMUR-AG15 iss1 cw	1	13/11/2020	1
TECH 183	1 Video installation guide complete	1	13/11/2020	1
TECH 196	2 Video installation guide overview DD	1	13/11/2020	1
TECH 209	3 Video installation guide overview DK	1	13/11/2020	1
TECH 185	4 Video vandalism – Permanent Marker	1	13/11/2020	1
TECH 190	5 Video vandalism – Spray Paint	1	13/11/2020	1

Certificate History

Issue	Date	Issue History
T1	24/04/2020	First accepted for trial use.
1	15/12/2020	First accepted for use
2	20/05/2021	Additional patterns added and trial sites for REB's

Contact Details

Manufacturer
Haide technologies Ltd
Info@haide technologies.co.uk

Applicant
Adam Checkley
Adam.checkley@networkrail.co.uk

Lead Reviewing Engineer
David King
David.king2@networkrail.co.uk

Certificate of Acceptance

PA05/07241

Manufacturer:
Haide Technologies Ltd

Issue : 2
Valid From : 24-05-21

General Terms & Conditions

1) General

- 1) This certificate can only be amended by Network Rail Product Acceptance, the Professional Head or nominated delegate. Any alterations made by a other persons will invalidate the entire certificate.
- 2) Failure to abide by the requirements in this Certificate of Acceptance may invalidate the certificate, thereby restricting the right to operate the product and / or limiting the future supply and deployment of the product on the infrastructure.
- 3) Upon the review date this certificate and the product it relates to is invalid and not accepted for use. Manufacturers are to make an application for a review prior to the review date.

2) Manufacturer

The Manufacturer shall:

- 1) Ensure that all products supplied comply with the standards defined in the Acceptance Requirements or otherwise documented as part of the assessment, including meeting the reliability requirements included in the Acceptance Requirements and in any deed of warranty for the relevant certificate number.
- 2) Notify Network Rail Product Acceptance:
 - a. Within 48 hours, of any deficiencies affecting the quality, functionality or safety integrity of the product (including corrective action undertaken or proposed).
 - b. Of any intended change to the accepted product; changes include:
 - i. a change to the product configuration (to the actual product or its application);
 - ii. a variation to or addition of manufacturing locations or processes;
 - iii. a change in the name or ownership of the manufacturing company;
 - iv. any changes to the ability or intention to support with technical services, spares or repairs.
- 3) The Manufacturer shall provide Network Rail Product Acceptance or National Supply Chain (NSC) at least 12 (twelve) months notice of its intention to discontinue supply or to provide such notice as is reasonable if such discontinuance is outside its control and will offer the opportunity of a Last Time Buy to Network Rail together with date for last order placement and supply of the parts affected. The introduction of proposed alternative products shall be communicated to Network Rail Product Acceptance.
- 4) Provide further copies of operating and maintenance manuals to purchasers / users of the product as necessary (including certificates of conformance, calibration etc).
- 5) Provide further copies of training manuals and an appropriate level of training to purchasers or users of the product as necessary.
- 6) Where applicable, specialist technical support, repairs and servicing of the product shall be carried out by the Original Equipment Manufacturer (OEM) or authorised agent only.
- 7) Network Rail may request information from the manufacturer to prove product compliance with clauses 1 and 2 above and reserve the right to suspend and/or withdraw any application where information is not forthcoming within a reasonable timeframe.
- 8) In accordance with Network Rail's Quality Assurance Policy Statement 2011, where the specification and/or Product Acceptance Certificates specify quality assurance classifications (QA1 to QA5) for the products, the manufacturer shall comply with the specified level of quality assurance for each product and allow Network Rail access to carry out its quality assurance checks.
- 9) The manufacturer shall give Network Rail's representatives access at all reasonable times to its premises and allow them to inspect its quality systems and production methods and, if requested, to inspect, examine and test the products both during and after their manufacture and the materials being used in their manufacture.

3) Conditions of Use

Specifiers, installers, operators, maintainers, etc. using the product shall:

- 1) Comply with the certificate conditions. If a condition is not understood guidance must be sought from Network Rail Product Acceptance.
- 2) Check that the application of use complies with the relevant certificate's scope of acceptance.
- 3) Report any defect if it is a design or manufacturing fault likely to affect performance and/or the safe operation of the railway in writing to Network Rail Product Acceptance.
- 4) Inform Network Rail Product Acceptance in writing of a change to the product configuration (or to the actual product or its application).
- 5) Operate, maintain and service the product in accordance with Network Rail standards and Operation and Maintenance manuals as appropriate.
- 6) Be appropriately trained and authorised for the installation, maintenance and use of the product.
- 7) Only send products for repair or reconditioning to the Original Equipment Manufacturer (OEM) or authorised agent.
- 8) Users are to be aware that Product Acceptance is not a substitute for design approval.

Certificate of Acceptance

PA05/07241

Manufacturer:
Haide Technologies Ltd

Issue : 2
Valid From : 24-05-21

4) Compliance

Railways and Other Guided Systems (ROGS) Regulations

1) Where the product is to be used in areas where Network Rail is not the Infrastructure Manager (e.g. leased stations), the sponsor shall additionally obtain formal consent from the Infrastructure Manager for the locality where the equipment is to be installed. This may include a requirement for additional safety verification. The decision of that Infrastructure Manager is binding, and cannot be overridden by Network Rail except by the escalation processes established in the ROGS regulations

2) As required in Railway Group Standard GE/RT8270, at each use of this product the project or group responsible for installation and commissioning shall be required to demonstrate compatibility with:

- a. All rail vehicle types that have access rights over the area affected by the change
- b. Infrastructure managed by others
- c. Neighbours.

Railway Interoperability Regulations

3) For interoperable constituents of systems the project or group responsible for installation and commissioning shall be required to demonstrate compliance with the relevant Technical Specifications for Interoperability (TSI) where appropriate.

4) An authorisation from the national safety authority (i.e. the Railway Safety Directorate of the Office of Rail Regulation) is required before the equipment is to be used in revenue earning service.

5) Supply Chain Arrangements

1) Certificates of acceptance do not imply any particular quantity of supply nor any exclusivity of supply.

2) Products may be purchased by Network Rail or its agents, suppliers or contractors.

3) Manufacturers should note that it is not necessary to enter into any exclusive supply arrangements with resellers or other suppliers.