ExMC/582/DV
January 2010

INTERNATIONAL ELECTROTECHNICAL COMMISSION SYSTEM FOR CERTIFICATION TO STANDARDS RELATING TO EQUIPMENT FOR USE IN EXPLOSIVE ATMOSPHERES (IECEx SYSTEM)

Title: IECEx Assessment Report for the acceptance of *TRaC EMC and Safety Ltd.* - as an IECEx Test Laboratory (ExTL) within the IECEx System.

To: Members of the IECEx Management Committee, ExMC

INTRODUCTION

This document contains the IECEx Assessment Report for the acceptance of *TRaC EMC and Safety Ltd* as an Accepted IECEx Test Laboratory (ExTL) within the IECEx System.

This report is hereby submitted for voting.

Please consider this assessment report and return the completed voting form (A separate document - in Word Format) to the IECEx Secretariat by 26th February 2010. Your speedy response to the voting process will be very much appreciated.

Chris Agius

Chris Agius
Secretary IECEx

Address:	Contact Details:
SAI Global Building	Tel: +61 2 8206 6940
286 Sussex Street	Fax: +61 2 8206 6272
Sydney NSW 2000	e-mail: chris.agius@iecex.com
Australia	http://www.iecex.com

IECEx ASSESSMENT REPORT FOR TRAC EMC AND SAFETY LTD IECEx TEST LABORATORY (ExTL)

Type of Assessment: (please mark)

Initial assessment for Candidate ExTL X

This assessment was a joint IECEx and UKAS assessment. For this reason the main lead assessor for the combined UKAS/IECEx Team was Chris Bestwick from UKAS, which is the UK Accreditation Body

1. OBJECT AND FIELD OF APPLICATION

1.1. *Country:*

United Kingdom.

1.2. *Name of Candidate TL*

TRaC EMC and Safety Ltd.

1.3. *Members of the Assessment Team*

Chris Bestwick - UKAS Lead Assessor and Combined Team Leader
Jim Munro - Lead IECEx Assessor and UKAS technical assessor
Thierry Houeix - IECEx Lead Assessor in Training and UKAS technical assessor
Herbert Peters - Expert IECEx assessor and UKAS technical assessor

1.4. *Place and Date of Assessment*

TRaC EMC and Safety Ltd,
Moss View,
Nipe Lane,
Up Holland,
West Lancashire, WN8 9PY,
United Kingdom.

Assessment dates: 2009-06-30 to 2009-07-02.

This assessment was conducted as a Joint IECEx / UKAS Assessment according to the MOU between IEC and ILAC.

1.5. *Assessment References*

i) IECEx 02 Third Edition 2006-11 IECEx Scheme rules of procedure

ii) IECEx Operational Document OD 003 IECEx Assessment procedures
iii) IECEx Operational Document OD 009 Issuing of CoCs, ExTRs and QARs
iv) ISO/IEC 17025:2005
v) IECEx Technical Guidance Documents (TGDs)
vi) ExTAG decision sheets (DSs)
vii) ExTL application documents dated 7 August 2008

1.6. Scope of Application (to be selected)

Number	Title
60079-0 Edition 4	Explosive atmospheres - Part 0: Equipment - General requirements
60079-0 Edition 5	Explosive atmospheres - Part 0: Equipment - General requirements
60079-1 Edition 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures “d”
60079-2 Edition 5	Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure «p»
60079-7 Edition 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
60079-11 Edition 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety “i”
60079-15 Edition 3	Electrical apparatus for explosive gas atmospheres - Part 15: Construction, test and marking of type of protection "n" electrical apparatus
60079-18 Edition 2	Electrical apparatus for explosive gas atmospheres - Part 18: Construction, test and marking of type of protection encapsulation "m" electrical apparatus
60079-26 Edition 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga
60079-31 Edition 1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
61241-0 Edition 1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
61241-1 Edition 1	Electrical apparatus for use in the presence of combustible dust Part 4: Protection by enclosures "tD"
61241-4 Edition 1	Electrical apparatus for use in the presence of combustible dust Part 4: Protection by pressurised enclosures "pD"
61241-11	Electrical apparatus for use in the presence of combustible dust –

Edition 1	Part 11: Protection by intrinsic safety 'iD'
61241-18 Edition 1	Electrical apparatus for use in the presence of combustible dust Part 18: Protection by encapsulation "mD"

1.7. *Candidate TL Persons Interviewed*

Name	Position
Simon Barrowcliff	Director - Safety
Dan Lyden	Ex Senior Project Engineer
Asif Sadiq	Ex Project Engineer
Andrew Neild	Ex Test Engineer
Rob Pellizze	Associate project engineer

1.8. Legal Entity of The Candidate TL

TRaC EMC and Safety Ltd is a public limited company (incorporated as a UK limited company and is registered with Companies House (registration no. 5566063)) and a wholly owned subsidiary of Bioquell PLC. See section 1.11 below.

1.9. *Associated ExCB*

The ExCB ,TRaC EMC and Safety Ltd is integral to the ExTL

1.10. *Financial Support*

The ExTL is part of an independent test and certification company. It is self financing by fees charged to clients for test and certification activity. The last audited accounts from 2009 were available and were reviewed during the visit. This shows that TRAC has the necessary ongoing financial stability to support certification schemes.

1.11. History

TRaC EMC and Safety Ltd (trading as “TRaC”) operates as an independent, third party test, inspection and certification business and is not involved in the design, manufacture, installation, supply, purchase or use of products that it has certified. Within this business there is an independent certification body function.

The head office of TRaC is in Malvern, Worcestershire, United Kingdom, where EMC and radio testing are conducted. The company also operates a safety test laboratory in Watford, United Kingdom. EMC and radio testing is also conducted at the Up Holland site.

TRaC EMC and Safety Ltd was formerly known as TRL Compliance Ltd until January 2009.

TRaC EMC and Safety Ltd is part of the TRaC Global group of companies. TRaC Global is a specialist compliance group and encompasses four compliance companies: TRaC EMC and Safety Ltd, TRaC Environmental and Analysis Ltd and TRaC Telecoms and Radio Ltd. Since April 2008, the TRaC Global Group has a

common Managing Director, Mark Heaven, who is responsible for all of the TRaC companies.

The owner of TRaC EMC and Safety Ltd (also of the other above mentioned TRaC Group Companies) is Bioquell PLC which is a UK stock exchange listed company. The BIOQUELL PLC Group comprises two divisions; Bio-decontamination (which includes specialist hydrogen peroxide vapour bio-decontamination equipment for the pharmaceutical, life sciences and healthcare sectors, and Chemical, Biological, Radiological and Nuclear (CBRN) filtration products for the defence sector. Bioquell's interest in TRaC EMC and Safety Ltd (and all of the TRaC Global companies) is purely financial. It does not have any direct influence on testing and certification matters. The Bio-Decontamination and TRaC divisions operate independently of each other.

TRaC EMC and Safety Ltd is incorporated as a UK limited company and is registered with Companies House (registration no. 5566063).

The scope of activities as a test laboratory are defined by operation under ISO/IEC17025 (UKAS accreditation).

TRaC EMC and Safety Ltd has been a notified body for testing and certification of ATEX equipment since 2003. The company has also been issuing certificates for electrical equipment since 1995 (under UKAS ISO/IEC 17025 accreditation). TRaC EMC and Safety Ltd gained UKAS EN45011 accreditation for ATEX and electrical equipment in October 2007. TRaC EMC and Safety Ltd was accepted into the IECEE CB scheme as both NCB and CBTL in July 2008.

2. ORGANISATION

2.1. Names, Titles and Experience of the Senior Executives

Name	Title	Experience
Steve Hayes	Managing Director	15 years
Mark Heaven	CEO	20 years

2.2. Name, Title and Experience of the Quality Management Representative

Name	Title	Experience
Nick Bourne	Quality Manager	35 years

2.3. Name and Title of Nominated Principal Contact

Name	Title	Comments
Simon Barrowcliff	Director - Safety	

2.4. Employees

Name	Position	Ex Experience
Dan Lyden	Ex Senior Project Engineer	9 years

Asif Sadiq	Ex Project Engineer	6 years
Andrew Neild	Ex Test Engineer	2 years
Bob Pellizze	Ex Project Engineer	10 years

2.5. Organizational Structure

See charts appended to this document.

3. RESOURCES

TRaC has the necessary equipment and personnel resources to carry out testing for the standards shown in the scope with some testing being subcontracted as detailed in the ExCB report.

4. DOCUMENTATION

4.1. Quality Manual

The company has a comprehensive set of quality system documents contained in a company quality system folder (Quality Manual, Company Procedures and Product Certification Manual).

The Quality Manual is formatted around ISO/IEC17025 and contains the top level requirements. This is supported by Company Procedures and Divisional Procedures and meets the requirements of the IECEx System.

4.2. Procedures

The company has a comprehensive set of quality system procedure documents contained in a company quality system folder (Quality Manual, Company Procedures and Product Certification Manual).

The Company Procedures provide details of implementation of ISO17025 at a company level through four sets of procedures covering administration (ADPs), testing (TEPs), quality (QAPs) and customer related (CRPs).

The Divisional Procedures are controlled by the Ex business stream. All the procedures required for IECEx operation are available and meet the requirements of the IECEx System.

IECEx Documentation is stored on the company server. This includes Scheme documents (Rules), ODs and ExTAG decision sheets. All IECEx documentation is included and indexed on the server. The decision sheets have been grouped by standard to make them easier to apply. The relevant standards procedures reference the need to apply the decision sheets and these can then readily be found in the intranet.

4.3. Work Instructions

Work instructions are covered by the Ex business stream's dedicated procedure sets (XF and XFT series) and meet the requirements of the IECEx System.

4.4. Records

Documents associated with a certification project (e.g. application forms, evaluation records, surveillance reports, etc) are maintained through the established works order file system (procedure CRP-01 refers). Documents relating to certified products are maintained with the certification licence.

Certification records (and all associated records) are retained for at least 10 years after the end of certification. Records may be retained for a longer period and this will be established by the Certification Manager, in consultation with the Quality Manager and Managing Director, at this 10 year point.

4.5. Document Change Control

Procedure QAP-04 ensures that all company generated documents are originated, checked, approved and issued to the correct place to ensure efficient operation of the company and in are accordance with the standards and approvals held by the company. Wherever possible, documents are issued in a recognised company wide format.

4.6. Test Records

Test records are held with the project file (see also procedure XF001), normally in electronic form.

5. TEST REPORTS

5.1. Test Reports Issued

Number of test reports issued under the, national or regional schemes in the preceding four years for each type of protection:

Standards	**Title**	**Number of issued test reports**				
		2006	2007	2008	2009	Total
60079-0	Electrical apparatus for explosive gas atmospheres Part 0: General requirements	*Part 0 included in numbers below*				
60079-1	Electrical apparatus for explosive gas atmospheres Part 1: Construction and verification test of flameproof enclosures of electrical apparatus	3	1	4	2	**10**
60079-2	Electrical apparatus for explosive gas atmospheres Part 2: Electrical apparatus, type of protection 'p' (Pressurization)	1	3	1	1	**6**

Standards	Title	Number of issued test reports				
		2006	2007	2008	2009	Total
60079-7	Electrical apparatus for explosive gas atmospheres Part 7: Increased safety 'e'			1	1	**2**
60079-11	Electrical apparatus for explosive gas atmospheres Part 11: Intrinsic safety 'i'	7	9	9	4	**29**
60079-15	Electrical apparatus for explosive gas atmospheres Part 15: Electrical apparatus with type of protection 'n' (Non-Sparking)		4	7	7	**18**
60079-18	Electrical apparatus for explosive gas atmospheres Part 18: Encapsulation 'm'					**0**
60079-26	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga		8	4	1	**13**
61241-0 **	Electrical apparatus for use in the presence of combustible dust Part 0: General requirements	*Part 0 included in numbers below*				
61241-1 **	Electrical apparatus for use in the presence of combustible dust Part 1: Electrical apparatus protected by enclosures				1	**1**
61241-4 **	Electrical apparatus for use in the presence of combustible dust Part 1: Electrical apparatus protected by pressurisation					**0**
61241-11 **	Electrical apparatus for use in the presence of combustible dust Part 11: Protection by intrinsic safety 'iD'				1	**1**
61241-18 **	Electrical apparatus for use in the presence of combustible dust Part 18: Protection by encapsulation 'mD'					**0**
This list includes certification to equivalent EN500xx series standards and variation/amendment certificates. ** Requirements of these standards were considered substantially similar to the relevant EN60079 series standard.						

6. CALIBRATION

It is the policy of the company that all test/measuring equipment shall undergo a regular check to ensure its continued operation to the accuracy required, if used for performance measurement. This procedure applies to all test and measuring equipment wherever used by the company to ensure the correctness of a product or process, be it in the testing or service operations. Procedure TEP-14 refers.

All calibrations shall be performed by comparison to a known standard or device if special to type. All standards shall be traceable to national or international standards or approved TRaC EMC & Safety Ltd device if special to type. All calibrations shall be performed under the climatic conditions prescribed by the manufacturer of the standard and the equipment to be calibrated. Equipment that is not calibrated in-house

or by its manufacturer shall only be given to approved calibration establishments. Approved calibration establishments are listed on the approved vendor list.

Most equipment is calibrated externally at UKAS laboratories. There is a data base that also covers the Watford site which is used to keep track of instruments requiring calibration and when they are due. The calibration certificates for recent calibrations are available on the intranet. When an instrument comes back from calibration the certificate is stamped before it is put back into service.

There were some areas identified as requiring an improvement in calibration. These included the oxygen analyzers, dynamic calibration checks of the pressure determination system for Ex d and the instrument used for monitoring temperature and humidity in the environmental chamber. These were all resolved to the satisfaction of the assessment team.

7. CONFIDENTIALITY

All certification records, and associated test and inspection records, are retained in a secure environment such that access to these records is restricted to authorised personnel (procedure CRP-05 refers).

Procedure TEP-30 governs the confidentiality, independence and impartiality requirements placed upon all persons associated with the certification body (including those directly involved in certification activity and those involved in its management and supervision).

All TRaC EMC and Safety Ltd staff are subjected to confidentiality requirements with the assessment team verifying confidentiality agreements during the assessment on TRaC EMC and Safety Ltd records

Procedure TEP-30 governs the disclosure of information in respect of certification activity and certified products.

A selection of confidentially documents were reviewed and found to meet the IECEx System's requirements.

8. NATIONAL ACCREDITATION

TRaC EMC and Safety Ltd has UKAS accreditation to ISO/IEC17025 as a testing laboratory. The accreditation certificate and extract from the scope is shown at Annex 3.

9. RECOGNITION AND AGREEMENTS

TRaC is a Notified Body regarding ATEX 94/9/CE directive and some others (including Machinery 2006/42/EC, Low Voltage 2006/96/EC and EMC 2004/108/EC).

TRaC is an IECEE NCB at this site and an IECEE CBTL at its Watford and Hull sites.

TRaC has a partnering agreement with QPS (Canadian IECEx ExTL and ExCB). This agreement allows for subcontracting of tests when TRaC has insufficient capacity or when the client is based in Canada or USA.

10. INTERNAL AUDIT AND PERIODIC REVIEW

TRaC EMC & Safety Ltd conducts internal audits in accordance with a predetermined schedule and procedure to verify that its operations continue to comply with the requirements of the Quality System. Procedure QAP-02 section 3.2 covers internal audits. The Quality Assurance Manager is responsible for the conduct of internal audits. Normally the cycle for internal auditing will be completed within one year. Procedure QAP-02 refers.

To ensure the continued effectiveness of the Quality System, an Annual Management Review (AMR) is conducted. The Managing Director, Management Team and the Quality Manager collectively review the system comprehensively, examining the methods of operation and performance of the procedures and standards within the Company. Thereby they ensure that the system continues to be effective, achieves its purpose and facilitates necessary changes or improvements. QAP-02 refers. The last review was held on 28th April 2009 with ATEX and IECEx subject included on the agenda for discussion.

11. COMPLAINTS AND APPEALS (Including appeals to IECEx)

Procedures CRP-03 and CRP-30 exist to ensure that complaints regarding certified products, service, presentation of results, methods or any other subject are effectively actioned. Also to ensure that appeals and disputes in respect of certification activity and dealt with fairly and transparently.

TRaC received last year 3 complaints regarding ATEX certificate but none concerning technical and certification aspect.

There were was no reference in the Application document that TRaC's customer can appeal to IECEx, if he is not satisfy by the TRaC's decision but this was subsequently included.

12. SPECIAL FACTS TO BE NOTED

12.1. *Supporting Documentation*

Copies of additional supporting information for this assessment have been provided to the applicant and the IECEx Secretariat. These are in the site assessment report and include:

- Details of issues raised and how these have been resolved to the satisfaction of the assessment team.
- Checklist for ISO/IEC 17025
- Photos of the facilities and tests witnessed
- Assessor notes
- Completed technical guidance notes (TGDs) for 60079-0, 60079-1, 60079-2 60079-7, 60079-11, 60079-15, 60079-18, 60079-31.

12.2. *Witnessed tests*

There were a number of tests witnessed as part of the assessment process. These included:

- For 'tD' - Dust Ingress Protection IP6X/5X
- For 'i' - Spark ignition test
- For 'd' - Flameproof pressure determination
- For 'd' – Over pressure test
- For 'e' - Temperature rise test on a junction box

13. COMMENTS (Including issues found during assessment)

There were a number of issues found during the assessment. Some details are included earlier in this report. The issues included calibration, the need for thread gauges, errors in issue ATEX reports and certificates, clarification regarding purity of gases, and the need for procedures to cover witness testing. All issues were resolved to the satisfaction of the assessment team.

14. RECOMMENDATION

Based on the assessment performed on 30 June to 2 July 2009 TRaC EMC and Safety Ltd is recommended for acceptance in the IECEx scheme as a IECEx Testing Laboratory (ExTL) according to the scope of the standards listed in this document.
However, the firsts reports for type of protection ‘i’ and ‘d’ need to be reviewed by the IECEx assessors.

Jim Munro
Lead IECEx Assessor
UKAS technical assessor

Thierry Houeix
IECEx Lead Assessor in training
UKAS technical assessor

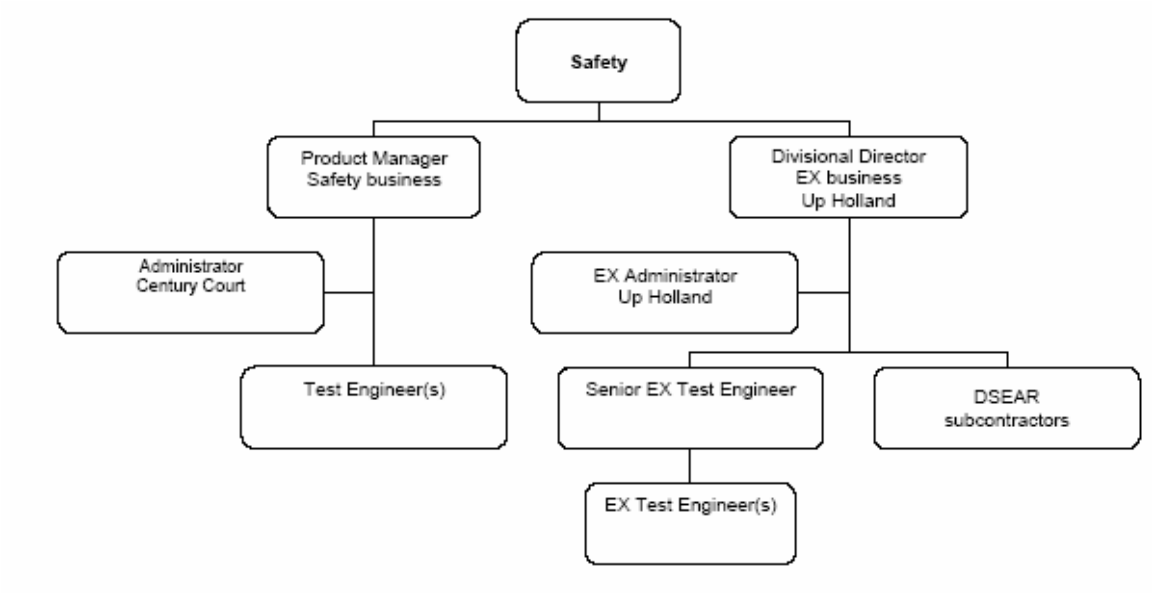
Herbert Peters
IECEx Expert Assessor
UKAS Technical Assessor

Chris Bestwick
UKAS Lead Assessor and Combined Team Leader
Date: 8 December 2009

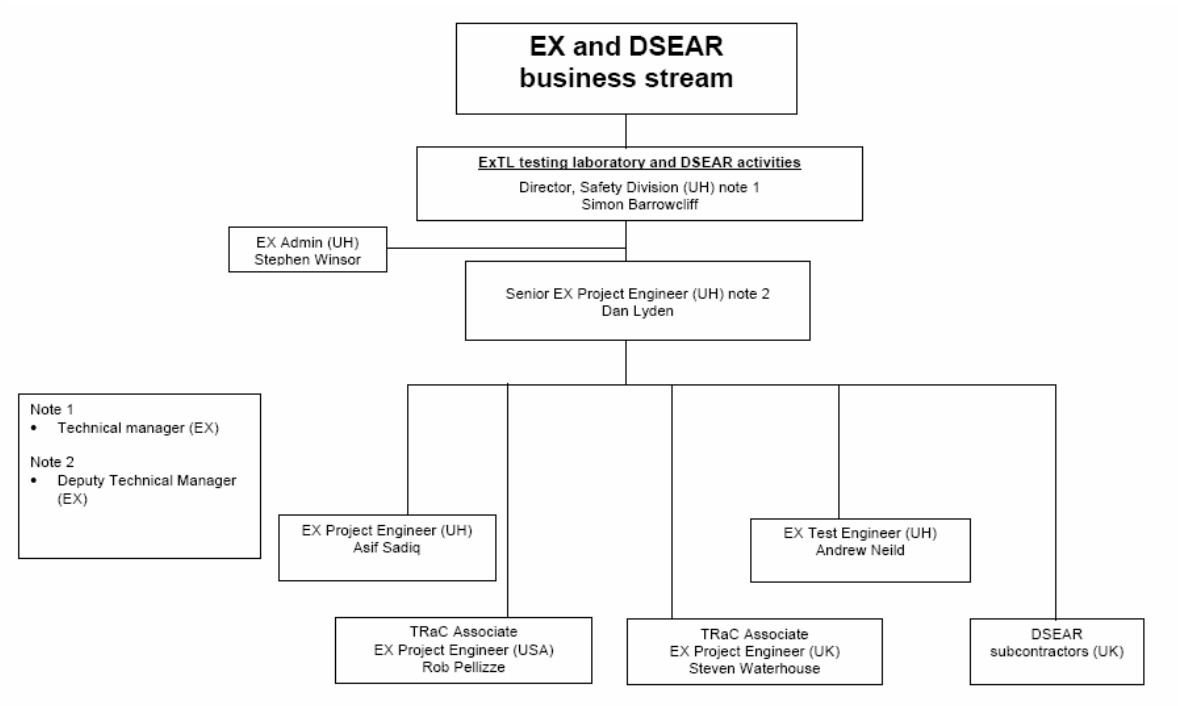
List of Annexes:

1. Overall Organization Chart of TRaC EMC and Safety Ltd
2. Organization Chart of TRaC ExTL
3. Accreditation Certificate for TRaC ExTL (UKAS ISO/IEC 17025), including extract from scope

Annex 1
TRaC EMC & Safety Ltd Organisation charts



Annex 2
TRaC ExTL Organisation charts



Annex 3 Schedule of Accreditation

issued by

United Kingdom Accreditation Service

21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

0728 **Accredited to ISO/IEC 17025:2005**	**TRaC EMC & Safety Ltd** **Issue No:** 056 **Issue date:** 11 November 2009
	100 Frobisher Business Park **Leigh Sinton Road** **Malvern** **Worcestershire** **WR14 1BX** **Contact: Mr S Hayes** **Tel: +44 (0)1684 571700** **Fax: +44 (0)1684 571701** **E-Mail: test@tracglobal.com** **Website: www.tracglobal.com**

Testing performed by the Organisation at the locations specified below

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details		**Activity**	**Location code**
Address 100 Frobisher Business Park Leigh Sinton Road Malvern Worcestershire WR14 1BX	**Local contact** Mr S Hayes Tel: +44 (0)1684 571700 Fax: +44 (0)1684 571701 Email: test@tracglobal.com Website: www.tracglobal.com	EMC	A
Address Northern Region Laboratory Moss View Nipe Lane Up Holland West Lancashire WN8 9PY	**Local contact** Mr P Green Tel: +44 (0)1695 556666 Fax: +44 (0)1695 557077 Email: test@tracglobal.com Website: www.tracglobal.com	EMC ATEX Testing Ingress Protection	B
Address 8 Century Court Tolpits Lane Watford Hertfordshire WD18 9RS	**Local contact** Mr C Rouse Tel: +44 (0)1923 229818 Fax: +44 (0)1923 226261 Email: test@tracglobal.com Website: www.tracglobal.com	Electrical Safety	C

Site activities performed away from the locations listed above:

Location details		Activity	Location code
Any Customer Premises	**Local contact** Mr S Hayes Tel: +44 (0)1684 571700 Fax: +44 (0)1684 571701 Email: test@tracglobal.com Website: www.tracglobal.com	EMC Electrical Safety	D

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Aerospace Equipment Circuit Breakers/Switches Computers and Peripherals Domestic Appliances Electrical/Electronic Components Electrical/Electronic Products Electric Cables Electrically Driven Wheelchairs Electro-Mechanical Devices Fans Fire Fighting and Detection Equipment Generators, Electrical Instruments, Indicating/ Recording IT Equipment Lamps, Electrical Luminaries Magnetic Materials Marine Equipment Measuring Equipment Medical Equipment Micro Electronic Circuits and Components Motors, Electrical Office Equipment: Electrical, Optical, and Photometric Equipment Plugs and Sockets: Electrical Power Supplies: Electrical Radio and TV Equipment Security Devices and Alarms Telecoms Equipment Toys	**1 EMC TESTS** **1.1 CIVIL EMC TESTS** 1.1.1 Conducted Emissions: Power Leads: 9 kHz to 30 MHz	BS 905:Part 1:1991 BS 1597:1985 CISPR 11:2003 including Amendment A1:2004 & A2:2006 CISPR 22:1993 EN 55011:1991 EN 55011:2007 including Amendment A2:2007 EN 55013:1990 EN 55014:1993 EN 55014-1:2000 including Amendment A1:2001 and A2:2002 EN 55015:1987 and 1996 CISPR 15:2005 Ed 7.0 including Amendment A1:2006 & A2:2009 CISPR 15:2009 Ed 7.2 EN 55015:2006 including Amendment A1:2007 EN 55022:1994 and 1998 FCC CFR 47:Part 15B ANSI C63.4:2003 AS/NZS 1044:1992 AS/NZS 1053:1992 AS/NZS 2064:1992 AS/NZS 3548:1995 AS/NZS 4051:1994 AS/NZS 4052:1992 AS/NZS 4053:1992 AS/NZS CISPR 11:2004 AS/NZS CISPR 15:2006 Documented TRL Procedure STP04, Issue 4:1998 ICES-001:Issue 4:2006 ICES-005 Issue 2:2007	A, B, D

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	**1 EMC TESTS** (cont'd) **1.1 CIVIL EMC TESTS** (cont'd) 1.1.2 Conducted Emissions: Signal and Control Lines: 9 kHz to 30 MHz	BS 1597:1985 CISPR 22:1988, 1993 and 1994 EN 55011:1991 CISPR 11:2003 including Amendment A1:2004 & A2:2006 EN 55011:2007 including Amendment A2:2007 EN 50065-1:1991 and 1992 EN 55022:1988 and 1994 EN 55022:1998 including ISDN ports where CDNs can be used AS/NZS 1044:1992 AS/NZS 1053:1992 AS/NZS 2064:1992 AS/NZS 3548:1995 AS/NZS 4051:1994 AS/NZS 4052:1992 AS/NZS 4053:1992	A, B
	1.1.3 Conducted Current Harmonics (Emissions): Measurements up to 40th Harmonic	EN 61000-3-2:1995 EN 60555-2:1987 EN 61000-3-2:2000 EN 61000-3-2:2006 IEC 61000-3-2:2009 Ed 3.2	A, B
	1.1.4 Conducted AC Mains Flicker (Emissions):	EN 61000-3-3:1995 EN 60555-3:1987 EN 61000-3-3:1995 including Amendment A1:2001 EN 61000-3-3:1995 including Amendment A1:2001 and A2:2005 EN 61000-3-3:2008	A, B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	**1 EMC TESTS** (cont'd) **1.1 CIVIL EMC TESTS** (cont'd) 1.1.5 Radiated Emissions: Magnetic Field 9 kHz to 30 MHz	CISPR 11:2003 including Amendment A1:2004 & A2:2006 EN 55011:1991 EN 55011:2007 including Amendment A2:2007 AS/NZS 1044:1992 AS/NZS 1053:1992 AS/NZS 2064:1992 AS/NZS 3548:1995 AS/NZS 4051:1994 AS/NZS 4052:1992 AS/NZS 4053:1992 AS/NZS CISPR 11:2004 Documented TRL Procedure STP05 Issue 4:1998 ICES-001:Issue4:2006	A, B, D
	1.1.6 Radiated Emissions Electric Field 30 MHz to 18 GHz	BS 1597:1985 CISPR 11:2003 including Amendment A1:2004 & A2:2006 CISPR 12:1985 CISPR 22:1993 and 1994 EN 55011:1991 and 1992 EN 55011:2007 including Amendment A2:2007 EN 55012:1985 EN 55014:1993 EN 55014-1:2000 including Amendment A1:2001 and A2:2002 EN 55015:1987 and 1996 CISPR 15:2005 Ed 7.0 including Amendment A1:2006 & A2:2009 EN 55015:2006 including Amendment A1:2007 CISPR 15:2009 Ed 7.2 EN 55022:1994 and 1998 FCC CFR 47:Part 15B ANSI C63.4:2003 RIA 18:1990	A, B, D

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	**1 EMC TESTS** (cont'd) **1.1 CIVIL EMC TESTS** (cont'd) 1.1.6 Radiated Emissions Electric Field 30 MHz to 18 GHz (cont'd)	AS/NZS 1044:1992 AS/NZS 1053:1992 AS/NZS 2064:1992 AS/NZS 3548:1995 AS/NZS 4051:1994 AS/NZS 4052:1992 AS/NZS 4053:1992 AS/NZS CISPR 11:2004 AS/NZS CISPR 15:2006 BOEING D6-16050:Para 8.4 Documented TRL Procedure STP06 Issue 5:1998 ICES-001:Issue 4:2006 ICES-005 Issue 2:2007	A, B, D
	1.1.7 Electrostatic Discharge Immunity	IEC 801-2:1994 IEC 801-2:1991 IEC 801-2:1984 IEC 1000-4-2:1995 EN 55101-2:1992 EN 61000-4-2:1995 including Amendments A1:1998 and A2:2001 prETS RES 0902:1992 AS/NZS 4251:1994 AS/NZS 4252:1994 Documented In-House Procedure STP11 Issue 4:1998	A, B, D
	1.1.8 Radio Frequency Susceptibility Magnetic Field DC and 10 Hz to 50 kHz 500 A/m	EN 61000-4-8:1994 including Amendment A1:2001 EN 61000-4-9:1994 including Amendment A1:2001 IEC 1000-4-9:1993 AS/NZS 4252.1:1994	A, B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	**1 EMC TESTS** (cont'd) **1.1 CIVIL EMC TESTS** (cont'd) 1.1.9 Radio Frequency Susceptibility Electric Field 14 kHz to 2.5 GHz 100 V/m maximum	BS 6667-3:1985 IEC 801-3:1984 IEC 801-3:Draft 7:Aug 1992 IEC 1000-4-3:1995 EN 61000-4-3:1996 EN 61000-4-3:2002 including amendment A1:2002 DD ENV 50140:1994 ENV 50204:1995 AS/NZS 4251.1:1994 AS/NZS 4252.1:1994 Documented TRL Procedure STP14 Issue 1:1998	A, B, D
	NOTE: Radiated Immunity Tests These tests must normally be carried out in a screened enclosure, or other arrangements made to prevent contravention of the Wireless Communications Act.		
	1.1.10 Fast Transient/Burst Immunity: 0.25 kV to 4.0 kV Positive and Negative Polarity 5 ns rise time, 10 ns duration 15 or 75 ms burst duration	IEC 801-4:1988 IEC 1000-4-4:1995 EN 61000-4-4:1995 EN 61000-4-4:2004 excluding 100 kHz repetition rate Documented TRL Procedure STP09 Issue 4:1998	A, B, D

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	**1 EMC TESTS** (cont'd) **1.1 CIVIL EMC TESTS** (cont'd) 1.1.11 Surge Immunity Waveforms: 0.2 kV to 6 kV 1.2/50 (8/20) µs Common mode Differential mode	ENV 50142:1994 DD ENV 50142:1995 EN 61000-4-5:1995 including Amendment A1:2001 EN 61000-4-5:2006 IEC 1000-4-5:1995 IEC 801-5 (draft):1990 Documented TRL Procedure STP10 Issue 4:1998	A, B, D
	1.1.12 Conducted Susceptibility CW, Transients and Magnetic Field 20 Hz to 230 MHz 10 V rms	prEN 50093:1992 DD ENV 50141:1994 ENV 50141:1993 IEC 601-1-2:1993 IEC 801-6:1990 EN 61000-4-6:1996 including Amendment A1:2001 EN 61000-4-6:2007 RIA 12:1984 RIA 18:1990 AS/NZS 4251.1:1994 Documented TRL Procedure STP08 Issue 5:1998	A, B, D
	NOTE: Conducted Immunity Tests These tests must normally be carried out in a screened enclosure, or other arrangements made to prevent contravention of the Wireless Communications Act.		
	1.1.13 Voltage Dips, Interruptions and Voltage Variations	EN 61000-4-11:1994 IEC 1000-4-11:1994 EN 61000-4-11:2004	A, B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	**1 EMC TESTS** (cont'd) **1.1 CIVIL EMC TESTS** (cont'd) 1.1.14 Site Surveys Conducted Emissions Radiated E-Field Radiated H-Field	Documented TRL Procedure STP13 Issue 1:1994	A, B, D
	1.1.15 EMC Tests These Generic and Product specific standards are included in this schedule, but limited to those referred basic standards that are explicitly listed in Sections 1.1.1 to 1.1.14.	IEC 601-1-2:1993 EN 60601-1-2:2001 EN 60601-1-2:2007 IEC 60601-1-2:2007 Ed 3.0 EN 12184:1999 EN 12184:2006 EN 50081-1:1992 EN 50081-2:1993 and 1994 EN 50082-1:1992 EN 50082-2:1995 EN 50091-2:1995 EN 55024:1998 EN 55103-1:1996[1] EN 55103-2:1996[1] [1]excluding TV and video products EN 50121-2:2000 EN 50121-3:2000, when tests applied to sub-assemblies only EN 50121-4:2000[2] EN 50121-5:2000[2] [2]excluding traction frequency tests EN 50199:1995 EN 50130-4:1995 including A1:1998 and A2:2003 EN 50270:1999 EN 55014-2:1997 including Amendment A1:2001 EN 60601-1-2:1993 EN 61000-6-1:2001 EN 61000-6-1:2007 EN 61000-6-2:2001 EN 61000-6-2:2005 EN 61000-6-3:2001 including A11:2004 EN 61000-6-3:2007	A, B, D

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	**1 EMC TESTS** (cont'd) **1.1 CIVIL EMC TESTS** (cont'd) 1.1.15 EMC Tests (cont'd) Note: International Standards, EN, ENV and IEC, listed in this Schedule, that have been adopted nationally as BS EN DD ENV and BS IEC and are technically identical, can be considered as being included in this Schedule.	AS/NZS 61000-6-3:2007 EN 61000-6-4:2001 EN 61000-6-4:2007 AS/NZS 61000-6-4:2007 EN 61800-3:1996 EN 61326:1997 including A1:1998 EN 61326-1:2006 EN 61326-2-1:2006 EN 61326-2-2:2006 EN 61326-2-3:2006 EN 61326-2-4:2006 EN 61326-2-5:2006 EN 61326-2-6:2006 IEC 61326-1:2005 EN 61547:1995 including A1:2000 EN 61800-3:1996 excluding "walkie talkie" tests ETS 300 279:1996 ETS 300 339:1998 ETS 300 342-1:1997 ETS 300 342-2:1994 prETS 300 385:1903 ETS 300 680-1:1997 ETS 300 680-2:1997 ETS 300 682:1997 ETS 300 683:1997 EN 301 489-1:V1.4.1:2002 EN 301 489-2:V1.3.1:2002 EN 301 489-3:V1.4.1:2002 EN 301 489-4:V1.3.1:2002 EN 301 489-5:V1.3.1:2002 EN 301 489-6:V1.2.1:2002 EN 301 489-7:V1.2.1:2002 EN 301 489-9:V1.3.1:2002 EN 301 489-11:V1.2.1:2002 EN 301 489-15:V1.1.1:2002	A, B, D

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	**1 EMC TESTS** (cont'd) **1.1 CIVIL EMC TESTS** (cont'd)		
Coating, Metallic Composite Materials Enclosures for Electrical Equipment Insulating Materials: Electrical	1.1.16 Shielding Effectiveness 10 kHz to 18 GHz	ASTM ES7:1983	A, B
As listed on Page 3	**1.2 <u>MILITARY AND AEROSPACE EMC TESTS</u>**		
	1.2.1 Conducted Emissions: Power, Control and Signal Leads: DC to 400 MHz Antenna Terminals 10 kHz to 18 GHz	MIL STD 461C, CE01, CE02, CE03, CE04 and CE07 MIL STD 461D, E and F CE101, CE102, CE03 and CE04 DEF STAN 59-41:Issue 3 and 5 DCE01 and DCE02 DEF STAN 59-41:Part 3, Section 2, Issue 2:1999, DCE01 and DCE 02 Def Stan 59-411 Part 3 inc A1 DCE01 and DCE 02 DEF STAN 59-41:Part 3, Section 3, Issue 1:2003 DCE01, DCE02 and DCE03 MIL STD 461D, E and F CE106 DEF STAN 59-411:Part 4:2007 Inc A1 DCE01 and DCE02	A
	1.2.2 Radiated Emissions: Electric Field: 9 kHz to 18 GHz	MIL STD 461C, RE02 MIL STD 461D, E and F RE102, RE103 DEF STAN 59-41:Issue 3 and 5, DRE01 and DRE03 DEF STAN 59-41:Part 3, Section 2, Issue 2:1999 DRE01	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	**1 EMC TESTS** (cont'd) **1.2 <u>MILITARY AND AEROSPACE EMC TESTS</u>** (cont'd) 1.2.2 Radiated Emissions: Electric Field: (cont'd)	DEF STAN 59-41:Part 3, Section 3, Issue 1:2003 DRE01 and DRE03 Def Stan 59-411 Part 3 inc A1 DRE01 and DRE03 RTCA/DO160C, D and E, Section 21 DEF STAN 59-411:Part 4:2007 inc A1 DRE01, DRE03 and DRE04	A
	1.2.3 Radiated Emissions: Magnetic Field: 20 Hz to 50 kHz	MIL STD 461C, RE01, RE04 MIL STD 461D, E and F RE101 DEF STAN 59-41:Issue 3 and 5, DRE02 DEF STAN 59-41:Part 3, Section 3, Issue 1:2003 DRE02 Def Stan 59-411 Part 3 inc A1 DRE02	A
	1.2.4 Exported Transients Power Lines	DEF STAN 59-41:Issue 3 and 5, DCE03 DEF STAN 59-41:Part 3, Section 3, Issue 1:2003 DCE03 Def Stan 59-411 Part 3 inc A1 DCE03	A
	1.2.5 Radiated Susceptibility: Electric Field: 14 kHz to 18 GHz Maximum Field Strength: 200 V/m	MIL STD 461C, RS03 MIL STD 461D, E and F RS103 DEF STAN 59-41:Issue 3 and 5, DRS02	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	**1 EMC TESTS** (cont'd) **1.2 <u>MILITARY AND AEROSPACE EMC TESTS</u>** (cont'd) 1.2.5 Radiated Susceptibility: Electric Field: (cont'd)	DEF STAN 59-41:Part 3, Section 2, Issue 2:1999 DRS02 DEF STAN 59-41:Part 3, Section 3, Issue 1:2003 DRS02 Def Stan 59-411 Part 3 inc A1 DRS02 RTCA/DO-160C, D and E: Section 20 BOEING D6-16050:para 7.3 DEF STAN 59-411:Part 4:2007 Inc A1 Low Level Swept Current DEF STAN 59-411:Part 4:2007 Inc A1 DRS02	A
	1.2.6 Radiated Susceptibility: Magnetic Field: 20 Hz to 100 kHz Maximum Field Strength: 170 dBT	MIL STD 461C, RS01 and RS02 MIL STD 461D, E and F RS101 DEF STAN 59-41:Issue 3 and 5, DRS01 DEF STAN 59-41:Part 3, Section 3, Issue 1:2003 DRS01 Def Stan 59-411 Part 3 inc A1 DRS01	A
	1.2.7 Magnetostatic Field Susceptibility	DEF STAN 59-41:Issue 3 and 5, DMFS01 and DRS03 DEF STAN 59-41:Part 3, Section 3, Issue 1:2003 DRS03 DEF STAN 59-411:Part 3 inc A1 DRS03	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	**1 EMC TESTS** (cont'd) **1.2 <u>MILITARY AND AEROSPACE EMC TESTS</u>** (cont'd) 1.2.8 Conducted Susceptibility: Inter and Cross Modulation and Rejection of Unwanted Signals: 10 kHz to 400 MHz	MIL STD 461D, E and F CS103, CS104 and CS105	A
	1.2.9 Conducted Susceptibility: Power, Control and Signal Lines including Bulk Current Injection 20 Hz to 400 MHz Maximum current: 2 A	MIL STD 461C, CS02 MIL STD 461D, E and F CS114 DEF STAN 59-41:Issue 3 and 5, DCS02 and DCS03 DEF STAN 59-41:Part 3, Section 2, Issue 2:1999 DCS02 and DCS03 DEF STAN 59-41:Part 3, Section 3, Issue 1:2003 DCS02 and DCS03 Def Stan 59-411 Part 3 inc A1 DCS02 and DCS03 RTCA/DO-160C, D and E: Section 20 DEF STAN 59-411:Part 4:2007 Inc A1 High level bulk current injection	A
	1.2.10 Conducted Susceptibility Transients	MIL STD 461C, CS06 MIL STD 461D, E and F CS115 and CS116 DEF STAN 59-41:Issue 3 and 5, DCS04, DCS05, DCS06, DCS07 and DCS08 DEF STAN 59-41:Part 3, Section 2, Issue 2:1999 DCS05 and DCS06	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	**1 EMC TESTS** (cont'd) **1.2 <u>MILITARY AND AEROSPACE EMC TESTS</u>** (cont'd) 1.2.10 Conducted Susceptibility Transients (cont'd)	DEF STAN 59-41:Part 3, Section 3, Issue 1:2003 DCS04, DCS05, DCS06, DCS08 and DCS12 DEF STAN 59-411 Part 3 inc A1 DCS 04, DCS 05, DCS 06, DCS 08 and DCS 12 DEF STAN 59-411:Part 4:2007 Inc A1 DCS05 and DCS06 RTCA/DO-160C, D and E: Sections 17 and 19	
	1.2.11 Conducted Susceptibility: Primary Power Lines, 20 Hz - 50 kHz	MIL STD 461D, E and F CS101 MIL STD 461C, CS01 DEF STAN 59-41:Issue 3 and 5, DCS01 DEF STAN 59-41:Part 3, Section 2, Issue 2:1999 DCS01 DEF STAN 59-411:Part 4:2007 Inc A1 DCS01 DEF STAN 59-41:Part 3, Section 3, Issue 1:2003 DCS01 Def Stan 59-411 Part 3 inc A1 DCS01 RTCA/DO-160C, D & E:Section 18	A
	1.2.12 Electrostatic Discharge	DEF STAN 59-41:Issue 3 and 5, DCS10 DEF STAN 59-41:Part 3, Section 2, Issue 2:1999 DCS10	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	**1 EMC TESTS** (cont'd) **1.2 <u>MILITARY AND AEROSPACE EMC TESTS</u>** (cont'd) 1.2.12 Electrostatic Discharge (cont'd)	DEF STAN 59-41:Part 3, Section 3, Issue 1:2003 DCS10 DEF STAN 59-411:Part 3 inc A1	A
	1.2.13 Compass Safe Distance	RTCA/DO-160D and E:Section 15	A
	1.2.14 Power Input Checks and 28 V DC Electrical Systems in Military Vehicles	DEF STAN 61-5:Issue 5 MIL STD 1275B RTCA/DO-160C, D and E: Section 16	A
	1.2.15 Lightening Effects	RTCA/DO-160C, D and E: Section 22 BOEING D6-16050:para 7.4	A
	1.3 <u>AUTOMOTIVE EMC TESTS</u> 1.3.1 Radiated Emissions 9 kHz to 18 GHz Whole vehicle and components	CISPR 12:2001 CISPR 25:2002 2004/104/EC, Annexes IV, V, VII and VIII 2005/83/EC	A
	1.3.2 Radiated Immunity Absorption Chamber 400 MHz - 10 GHz at 200 V/m Whole vehicle and components	ISO 11452-1:2005 ISO 11452-2:2004, substitution method ISO 11451-1:2003 ISO 11451-2:2004 2004/104/EC Annexes VI, IX 2005/83/EC	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
As listed on Page 3	**1 EMC TESTS** (cont'd) **1.3 <u>AUTOMOTIVE EMC TESTS</u>** (cont'd) 1.3.3 Conducted Immunity BCI 1 MHz to 400 MHz	ISO 11452-1:2005 ISO 11452-4:2005, substitution method 2004/104/EC Annexes IX 2005/83/EC	A
	1.3.4 Vehicle Transient Testing 12 and 24 v Emissions and Immunity	ISO 7637-1:1990 ISO 7637-2:1990 ISO 7637-2:2004, pulses 1, 2a, 2b, 3a, 3b and 4 only 2004/104/EC Annexes X 2005/83/EC	A
Domestic Electronic Equipment	**2 SAFETY TESTS** Electrical Safety	EN 60065:2002	C
Domestic Electrical Equipment	Electrical Safety	EN 60335-1:2002	C, D
Skin or Hair Care Appliances (excluding heated curlers, helmet type, flexible hood, fixed hairdryers and those with a swivel cord connector)	Electrical Safety	EN 60335-2-23:2003	C
Room Heaters	Electrical Safety	EN 60335-2-30:1997 (Withdrawn)	C
Wet and Dry Vacuum Cleaners (excluding floor scrubbing apparatus)	Electrical Safety	EN 60335-2-69:1998 including Amendment A1:2000 (Withdrawn)	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	2 SAFETY TESTS (cont'd)		
Automatic Machines for Floor Treatment	Electrical Safety	EN 60335-2-72:1998 excluding ride-on machines excluding impact test Clause 22.35 (Withdrawn)	C, D
Vending Machines (excluding food and drink dispensers)	Electrical Safety	IEC 335-2-75:1995 (Withdrawn)	C, D
High Pressure Cleaners and Steam Cleaners for Industrial and Commercial Use (excluding other fuels and impact tests on pressurised ports)	Electrical Safety	IEC 335-2-79:1995 (Withdrawn)	C
Fans	Electrical Safety	EN 60335-2-80:1997 (Withdrawn)	C
Service and Amusement Machines (excluding Kiddie Rides and equipment intended for outdoor use)	Electrical Safety	EN 60335-2-82:2000 (Withdrawn)	C
IT Equipment and Electrical Office Equipment	Electrical Safety	EN 60950-1:2006 EN 60950-1:2001 including Amendment A11:2004 AS/NZS 60950.1:2003	C, D
Measurement and Control Equipment	Electrical Safety	EN 61010-1:2001 AS 61010.1:2003 UL 61010A-1:2002	C, D
Automatic and semi-automatic laboratory equipment for analysis	Electrical Safety	EN 61010-2-081:2002 including Amendment A1:2003	C, D

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
In vitro diagnostic (IVD) medical equipment	**2 SAFETY TESTS** (cont'd) Electrical Safety	EN 61010-2-101:2002	C, D
	Note: Where EN Standards have exact equivalents in BS or BS EN Standards, these are also included in the accreditation.	General exclusions to safety tests: (a) Testing of uncertified components whose test specification requirements are outside the scope of the listed standard (b) Vicat (c) Environmental tests (d) Tests on CRTs for implosion or radiation (e) Tests for radiation or laser emissions General exclusions to safety tests: (f) Capacitor tests (Annex ZC, EN 60335) (g) Scratch pin test (EN 60065, EN 60950, EN 60775-1)	

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Electrical and Non-Electrical Apparatus, Systems, Components, Accessories and Enclosures for use in Potentially Explosive Atmospheres	**3 EX PRODUCT TESTS**		
Electrical apparatus for explosive gas atmospheres General requirements	Construction, safety and marking Thermal Stability min temp -70°C max temp 200°C	IEC 60079-0 :2007 EN 60079-0 :2006 IEC 60079-0:2004	B
Tests for Flameproof equipment (Exd)	Construction, safety and marking	IEC 60079-1:2007	B
Tests for Purged and Pressurised equipment (Exp)	Construction, safety and marking	IEC 60079-2:2007	B
Tests for Increased Safety Apparatus (Exe)	Construction, safety and marking	IEC 60079-7:2006	B
Tests for Intrinsically Safe Apparatus, Associated Apparatus and Systems (Exi)	Construction, safety and marking	IEC 60079-11:2006	B
Tests for Electrical Apparatus for Explosive Atmospheres with Type of Protection n (Exn)	Construction, safety and marking	IEC 60079-15:2005	B
Tests for Encapsulated equipment (Exm)	Construction, safety and marking	IEC 60079-18:2004	B
Equipment with equipment protection level (EPL) Ga	Construction, safety and marking	IEC 60079-26:2007	B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Electrical and Non-Electrical Apparatus, Systems, Components, Accessories and Enclosures for use in Potentially Explosive Atmospheres (cont'd)	**3 EX PRODUCT TESTS** (cont'd)		
Protection by enclosure "tD"	Construction, safety and marking	IEC 60079-31:2008	B
Tests for Electrical Apparatus with Protection by Enclosure for use in the presence of Combustible Dusts General requirements	Construction, safety and marking	IEC 61241-0:2004	B
Tests for Electrical Apparatus with Protection by Enclosure for use in the presence of Combustible Dusts Protection by enclosure "tD"	Construction, safety and marking	IEC 61241-1:2004 Excluding: Practice B	B
Tests for Purged and Pressurised equipment (Exp) Enclosure for use in the presence of Combustible Dusts	Construction, safety and marking	IEC 61241-4:2001	B
Tests for Encapsulated equipment for use in the presence of Combustible Dusts (ExmD)	Construction, safety and marking	IEC 61241-18:2004	B
Protection by intrinsic safety "iD"	Construction, safety and marking	IEC 61241-11:2005	B
Basic Methods and Requirements	Construction, safety and marking	EN 13463-1:2001	B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Electrical and Non-Electrical Apparatus, Systems, Components, Accessories and Enclosures for use in Potentially Explosive Atmospheres (cont'd)	**3 EX PRODUCT TESTS** (cont'd)		
Constructural safety 'c'	Construction, safety and marking	EN 13463-5:2003	B
Protection by liquid immersion "k"	Construction, safety and marking	EN 13463-8:2003	B
Environmental Conditions and test procedures for Airborne Equipment	Explosion Testing Explosive Atmospheres	RTCA DO-160F Section 9 General exclusions to Ex tests (a) HV machines operating at >1000V e.g. motors and transformers; (b) Shock and Vibration tests; (c) UV light testing; (d) Specific tests on luminaires: torque tests (clause 5.3); asymmetric pulse test (Annex H); sulphur dioxide test (clause 6.3).	B
Where IEC or EN standards have exact equivalents in BS, EN or BS EN Standards these are also included in the accreditation.			
	4 INGRESS PROTECTION TESTS		
Enclosures for Electrical Equipment	IP1X Protected against solid objects greater than 50 mm diameter	IEC 60529:2001, Amd 1	B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	4 INGRESS PROTECTION TESTS (cont'd) IP2X Protected against solid objects greater than 12 mm diameter IP3X Protected against solid objects greater than 2.5 mm diameter IP4X Protected against solid objects greater than 1.0 mm diameter IP5X Dust Protected Excluding: Objects greater than 2000 x 2000 x 2000 mm Max weight: 500 kg IP6X Dust Tight Excluding: Objects greater than 2000 x 2000 x 2000 mm Max weight: 500 kg IPX3 Protected against spraying water IPX4 Protected against splashing water IPX5 Protected against water jets IPX6 Protected against heavy seas		

Where IEC or EN standards have exact equivalents in BS, EN or BS EN Standards, these are also included in the accreditation.

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Facilities at Up Holland Shielded Room A: 3 m x 4 m x 5 m Shielded Room B: 3 m x 4 m x 6 m Shielded Room C: 2.5 m x 2.5 m x 5 m Shielded Room D: 5.7 m x 2.6 m x 2.4 m Max EUT Size: 2 m x 2 m x 2 m Max EUT Weight: 5000 kg Open Area Test Site: 10 m and 3 m EUT Cabin: 2 m x 2 m x 2 m Turntable Weight of EUT: 2000 kg Power Supplies Available: 240V AC 13A, 1 phase 240V AC 32A, 1 phase 115V AC 13A, 1 phase 415V AC 16A, 3 phase 415V AC 32A, 3 phase 60V DC 50A Freezer enclosure size for Thermal Stability test 700 x 700 x 700 mm Humidity enclosure size for Thermal Stability test –25°C to 100°C, 800 x 800 x 500 mm Oven enclosure size for Thermal Stability test 25°C to 100°C, 430 x 450 x 470 mm Dust Chamber for IP5X and IP6X, size 2000 x 2000 x 2000 mm Max weight: 500 kg		
	Facilities at Malvern Shielded Room A: 8.7 m x 5.7 m x 5.4 m Shielded Room B: 8.7 m x 5.7 m x 5.4 m Shielded Room C: 2.5 m x 2.5 m x 3 m Shielded Room D: 5.7 m x 2.6 m x 2.4 m Shielded Room E: 18 m x 16 m x 6 m Shielded Room F: 5 m x 5 m x 4 m Shielded Room G: 5.5 m x 5 m x 4 m Shielded Room H: 4 m x 3 m x 3 m Shielded Room I: 4 m x 3 m x 3 m GTEM 1650		

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Facilities at Malvern (cont'd) Power supplies Available:- 240V AC 13A, 1 phase 240V AC 32A, 1 phase 115V AC 13A, 1 phase 415V AC 16A, 3 phase 415V AC 32A, 3 phase 415V AC 64A, 3 phase 60V DC 100A 415V AC 400Hz 32A, 3 phase		
	Facilities at Century Court: Safety Tests		
END			