



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 08ATEX1293X** Issue: **8**

4 Equipment: **ToughPIX 230#XP or Centurion XP.. Flameproof Digital Camera**

5 Applicant: **CorDEX Instruments Limited**

6 Address: **Unit 1 Owens Road
Skippers Lane Industrial Estate
Middlesbrough
Cleveland TS6 6HE
UK**

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2006 EN 60079-1:2007
IEC 60079-0:2007 was used as guidance in respect of marking

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

**Centurion XPG or
ToughPIX 2301XP**



II 2 G
Ex d IIC T4 Gb
Ta = -20°C to +50°C

or

**Centurion XPM2 or
ToughPIX 2302XP**



I M2
Ex d I Mb
Ta = -20°C to +50°C

or

**Centurion XP Dual or
ToughPIX 2303XP**



I/II M2/2G
Ex d I Mb / Ex d IIC T4 Gb
Ta = -20°C to +50°C

Project Number 25415

C Ellaby
Deputy Certification Manager

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13 DESCRIPTION OF EQUIPMENT

The ToughPIX 230#XP Flameproof Digital Camera is basically a flameproof enclosure containing a digital camera. The device comprises a main enclosure with a bolt on external battery pack and a non-metallic overmoulding.

The main enclosure comprises of two main parts: the rear carriage and the front cover, the joint between these two parts forming a flanged flamepath. The rear carriage is secured to the front cover with ten M3 x 12 mm hexagonal socket cap head screws, the heads of these screws being protected by their location in appropriate counter bored holes.

The rear carriage includes a toughened glass viewing window as well as operating rods. Located to one side of the rear face of the rear carriage is a toughened glass window to allow the viewing of an internal LCD screen, the joint between the toughened glass window and the rear carriage forming a spigotted flamepath. The toughened glass window is secured by a retaining plate which is held in place by ten M3 x 6 mm hexagonal socket cap head screws, the heads of these screws being protected by their location behind the external overmoulding. To allow operation of the internal digital camera, the rear carriage is provided with six operating rods. The joint between the rods and the rear carriage forms a cylindrical flamepath. The operating rods are secured against displacement by an internal shoulder.

The front cover includes a further toughened glass window, a bolt on battery pack, a USB access port and additional operating rods. Located to one side of front face of the front cover is a toughened glass window to allow light to access the internal digital camera, the joint between the toughened glass window and the rear carriage forming a spigotted flamepath. The toughened glass window is secured by a retaining plate which is held in place by six M3 x 6 mm hexagonal socket cap head screws, the heads of these screws being protected by their location behind the external overmoulding. Located alongside the toughened glass window is a detachable battery pack. The battery pack comprises an aluminium housing containing two rechargeable AAA size batteries and associated circuitry. The joint between the battery pack and the front cover forms a flanged flamepath. The battery cover is secured by six M4 x 12 mm hexagonal socket cap head screws, the heads of these screws being protected by their location in appropriate counter bored holes. To allow operation of the internal digital camera, the front cover is provided with two operating rods. The joint between the rods and the front cover forms a cylindrical flamepath. The operating rods are secured against displacement by an internal shoulder. To allow access to the internal USB port the front cover is provided with a threaded access port. The port is provided with a M16 x 1.5 thread, the access port is sealed with an appropriate blanking element. Removal of the blanking element requires an Allen key.

All fasteners are stainless steel to ISO 4762, grade A2-70

The assembly is provided externally with a permanent, non-metallic, anti-static protective overmoulded case.



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Variation 1 - This variation introduced the following changes:

- i. The length of the pushrods was increased.
- ii. Brass CZ121 and stainless steel 303 were recognised as an alternative materials for the USB access port cover.

Variation 2 - This variation introduced the following changes:

- i. The introduction of the 'clip-on' lens attachment.

Variation 3 - This variation introduced the following changes:

- i. The introduction of an alternative battery cell type Ansmann AAA – 1100 mAh 5035221.

Variation 4 - This variation introduced the following changes:

- i. The drawings introduced by Issue 4 were revised to align the ATEX Approval with the associated CSA approval; this includes an increase of the length of the USB plug threaded flamepath to accommodate CSA requirements.

Variation 5 - This variation introduced the following changes:

- i. Introduction of the following drawing changes:

Drawing	Changes
CDX-2341-007C	An alternative battery enclosure was introduced.
CDX-2341-010C	The side flanges were removed.
CDX-2341-019C	The side flanges were removed.
CDX-2341-020C	The CSA approval plate was added.
CDX-2341-021C	The shape of the outer overmoulding was changed and an alternative overmoulding material was added.
CDX-2341-022C	The side flanges were removed.
CDX-2341-024C	An alternative fuse type was added.
CDX-2341-025C	This drawing is not required and was removed.

Variation 6 - This variation introduced the following changes:

- i. The battery pack part number was changed.
- ii. The fuse details were modified to include the fuse part number.
- iii. The flamepath 'K' on drawing CDX-2341-019C revision H was corrected.
- iv. The equipment name was recognised as either 'Centurion XP...' or ToughPIX 230#XP.

Variation 7 - This variation introduced the following change:

- i. The company address was changed from Unit 6 Farfield, Main Road, Wykeham, Scarborough YO13 9QD to that currently shown in Section 6.

Variation 8 - This variation introduced the following change:

- i. The introduction of alternative battery cell type, Ansmann AAA – 800 mAh 503098.



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14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	17 June 2009	R51A18791A	The release of the prime certificate.
1	29 March 2010	R21498A/00	The introduction of Variation 1.
2	15 April 2010	R21771A/00	The introduction of Variation 2.
3	7 May 2010	R21946A/00	The introduction of Variation 3.
4	22 June 2010	R222625A/00	The introduction of Variation 4.
5	6 December 2010	R23606A/00	The introduction of Variation 5.
6	8 February 2011	R24253A/00	The introduction of Variation 6.
7	20 June 2011	R24253A/01 R25304A/00	This Issue covers the following changes: <ul style="list-style-type: none">Report no. 24253A/01 replaced R24253A/00, change number iv in Variation 6 being clarified accordingly, in addition the alternative product name was applied throughout the certificate as appropriate.The introduction of Variation 7.
8	3 November 2011	R25415A/00	The introduction of Variation 8.

15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

15.1 In accordance with clause 5.1 of EN 60079-1, the critical dimensions of the flamepaths are.

Flamepath	Maximum Gap (mm)	Minimum L (mm)
Rear carriage/front carriage	0.04	14.0
Front carriage/ battery pack	0.04	15.0
LCD Window/rear carriage	0.1	13.8
Lense window/front carriage	0.1	13.8
Operating rod/ rear and front carriage	0.1	10

15.2 This equipment shall only be used where there is a low risk of mechanical impact. The equipment is manufactured in aluminium alloy, in Group I applications this equipment must not be utilised where there is a risk of thermite reaction frictional ignition.

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 CONDITIONS OF CERTIFICATION

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.

17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.

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Sira Certification Service

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Certificate Annexe

Certificate Number: Sira 08ATEX1293X
Equipment: Centurion XP or ToughPIX 230#XP
Flameproof Digital Camera
Applicant: CorDEX Instruments Limited



Issue 0

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
CDX-2341-002C	1 of 1	C	15 Jun 09	Lens Retaining Plate-Front
CDX-2341-003C	1 of 1	B	15 Jun 09	Rear Carriage
CDX-2341-004C	1 of 1	C	15 Jun 09	Lens Retaining Plate-Rear
CDX-2341-005C	1 of 1	C	15 Jun 09	Pushrod
CDX-2341-006C	1 of 1	B	15 Jun 09	Front Lens Glass
CDX-2341-007C	1 of 1	E	15 Jun 09	Battery Pack G.A.
CDX-2341-010C	1 of 1	B	15 Jun 09	Front Carriage
CDX-2341-011C	1 of 1	B	15 Jun 09	LCD Screen Glass
CDX-2341-013C	1 of 1	C	15 Jun 09	Battery Protection Circuit
CDX-2341-014C	1 of 1	A	15 Jun 09	Parts List – Battery Protection Circuit
CDX-2341-015C	1 of 1	C	15 Jun 09	USB Access Port
CDX-2341-019C	1 of 1	E	15 Jul 09	Flamepath Details
CDX-2341-020C	1 of 1	D	15 Jun 09	Rating Plates
CDX-2341-021C	1 of 1	B	15 Jun 09	Full Assembly
CDX-2341-022C	1 of 1	D	15 Jun 09	Housing G.A.
CDX-2341-024C	1 of 1	A	15 Jun 09	PCB Blanking Plate
CDX-2341-025C	1 of 1	B	15 Jun 09	Lens Gasket
CDX-2341-026C	1 of 1	B	15 Jun 09	Screen Gasket

Issue 1

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
CDX-2341-005C	1 of 1	D	27 Jan 10	Pushrod
CDX-2341-015C	1 of 1	D	19 Mar 10	USB Access Port

Issue 2

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
CDX 2341-027C	1 of 1	A	09 Mar 10	Optical Accessory Adaptor

Issue 3

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
CDX 2341-013C	1 of 1	D	09 Apr 10	Battery protection circuit
CDX 2341-014C	1 of 1	C	09 Apr 10	Parts list battery protection circuit

Issue 4

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
CDX-2341-015C	1 of 1	E	16 Jun 10	USB access port
CDX-2341-019C	1 of 1	G	16 Jun 10	Flamepath details
CDX-2341-021C	1 of 1	C	16 Jun 10	Full Assembly
CDX-2341-024C	1 of 1	B	16 Jun 10	PCB blanking plate

Issue 5

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
CDX-2341-007C	1 of 1	G	08 Oct 10	Battery Pack G.A.
CDX-2341-010C	1 of 1	C	10 Oct 10	Front Carriage
CDX-2341-019C	1 of 1	H	15 Oct 10	Flamepath Details

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Certificate Annexe

Certificate Number: Sira 08ATEX1293X
Equipment: Centurion XP or ToughPIX 230#XP
Flameproof Digital Camera
Applicant: CorDEX Instruments Limited



Drawing	Sheets	Rev.	Date (Sira stamp)	Title
CDX-2341-020C	1 of 1	E	13 Nov 09	Rating Plates
CDX-2341-021C	1 of 1	D	08 Oct 10	Full Assembly
CDX-2341-022C	1 of 1	F	15 Oct 10	Housing G.A.
CDX-2341-024C	1 of 1	C	08 Oct 10	PCB Blanking Plate

The following drawing was removed:

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
CDX-2341-025C	1 of 1	B	15 Jun 09	Lens Gasket

Issue 6

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
CDX-2341-007C	1 of 1	H	08 Feb 11	Battery Pack G.A.
CDX-2341-014C	1 of 1	D	08 Feb 11	Parts List – Battery Protection Circuit
CDX-2341-019C	1 of 1	I	08 Feb 11	Flamepath Detail
CDX-2341-020C	1 of 1	F	08 Feb 11	Rating plates
CDX-2341-022C	1 of 1	G	08 Feb 11	Housing G.A

Issue 7

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
CDX-2341-020C	1 to 2	G	20 Jun 11	Rating Plate Designations
CDX-2341-022C	1 of 1	H	20 Jun 11	Housing G.A.

Issue 8

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
CDX-2341-007C	1 of 1	I	19 Sep 11	Battery Pack G.A
CDX-2341-013C	1 of 1	E	19 Sep 11	Battery Protection Circuit
CDX-2341-014C	1 of 1	E	19 Sep 11	Parts List – Battery Protection Circuit

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