



Australian Government  
Department of Industry,  
Innovation and Science

## National Measurement Institute

### Certificate of Approval NMI 16/1/2

Issued by the Chief Metrologist under Regulation 60  
of the  
National Measurement Regulations 1999

This is to certify that an approval for use **as legal measuring instruments** has been granted in respect of the instruments herein described.

Dräger Model Alcotest 7110 MK V Portable Evidential Breath Analyser

submitted by            Draeger Safety Pacific Pty Ltd  
                                 8 Acacia Place  
                                 Notting Hill    VIC    3168

This Certificate does NOT grant approval for use for trade.

**NOTE:** This Certificate relates to the suitability of the pattern of the instrument for use as a **legal** measuring instrument only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval has been granted with reference to document NMI R 126 *Pattern Approval Specifications for Evidential Breath Analysers*, dated June 2013.

This approval becomes subject to review on **1/10/21**, and then every 5 years thereafter.

#### DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – interim certificate issued	7/09/05
1	Pattern approved – certificate issued	22/03/06
2	Pattern amended (Table 1) – notification of change issued	22/03/07
3	Pattern amended (Table 1) – notification of change issued	17/03/08
4	Pattern amended (Table 1) – notification of change issued	4/06/08
5	Pattern amended (Table 1) – notification of change issued	5/09/08
6	Pattern amended (Table 1) – variant 1 approved – certificate issued	10/03/09

Document History (cont...)

Rev	Reason/Details	Date
7	Pattern amended (Table 1) – notification of change issued	9/06/10
8	Pattern & variant 1 reviewed – notification of change issued	19/01/11
9	Pattern amended (Table 1) – notification of change issued	11/02/13
10	Pattern amended (Table 1) – notification of change issued	30/10/13
11	Pattern & variant 1 reviewed & updated – certificate issued	6/05/16
12	Certificate amended ( <b>wording errors</b> ) – certificate issued	16/05/16

CONDITIONS OF APPROVAL

**General**

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 16/1/2' and only by persons authorised by the submittor.

It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificates No S1/0/A or No S1/0B.

**Special Condition of Approval**

Instruments shall be calibrated at intervals not exceeding twelve (12) months.

Signed by a person authorised by the Chief Metrologist to exercise their powers under Regulation 60 of the *National Measurement Regulations 1999*.



**Dr A Rawlinson**

TECHNICAL SCHEDULE No 16/1/2

**1. Description of Pattern**

**approved on 7/09/05**

A Dräger model Alcotest 7110 MK V portable evidential breath analyser (Figure 1) used to automatically determine the mass concentration of alcohol (#) in exhaled breath for evidential purposes. The instrument is portable and may be used in any location. It is approved for the measurement of the grams of alcohol in 210 litres of exhaled breath.

(#) For the purposes of this approval, all references to alcohol are taken to mean ethanol.

**1.1 Field of Operation**

The field of operation of the instrument is determined by the following characteristics:

- Measurement range 0 – 0.500 g/210 L
- Unit of measurement 0.001 g/210 L
- Ambient temperature range 0 – 40°C
- Power supply AC 230 – 240 V, 50 Hz  
DC 12 V
- Storage temperature -10 – 70°C

**1.2 Power Supply**

Power supply may be either:

- mains AC power (230 – 240 V AC, 50 Hz nominal); or
- a stable DC supply (12 V nominal) or remote 12 V battery, e.g. car battery.

**1.3 Display Check**

A display check is initiated whenever the device is powered-up.

**1.4 Interfaces**

The indicator may be fitted with interfaces as follows:

- (a) Any of the following keyboards may be connected to the pattern for convenient data entry:
  - a standard desktop keyboard;
  - a keyboard with magnetic strip reading equipment; or
  - an infrared wireless keyboard.
- (b) An RS232 serial data interface for the connection of peripheral devices.

**1.5 Verification Provision**

Provision is made for the application of a verification mark.

## 1.6 Software Versions

Instruments are fitted with Dräger software type 8319300, in different codes/versions as listed in Table 1 below, to meet state/territorial requirements.

These software versions below are displayed by typing 'SW-VERS' (or 'v' on some instruments) on the keyboard, while the 'Checksum' (where applicable) as shown in [square brackets] is displayed by typing 'CHECKSUM'.

TABLE 1

Software Number	Code	Version [Checksum]	Region/Group
8319300	C	1.00 [28348]	ACT
8319300	C	1.00b [28480]	ACT
8319300	C	1.03 [54098]	ACT
8319300	C	1.06 [28403]	ACT
8319300	C	1.00 [28348]	AFP
8319300	C	1.00b [28480]	AFP
8319300	C	1.03 [54098]	AFP
8319300	C	1.06 [28403]	AFP
8319300	M	1.03 [14414]	TAS
8319300	S	2.03 [50993]	SA
8319300	S	2.04 [47831]	SA
8319300	S	2.07 [55022]	SA
8319300	T	1.00 [60101]	NT
8319300	T	1.01 [64270]	NT
8319300	T	1.03 [157]	NT
8319300	T	1.04 [753]	NT
8319300	T	1.05 [44979]	NT
8319300	V	1.00 [25347]	VIC
8319300	W	1.02 [46826]	WA
8319300	W	1.04 [52924]	WA
8319300	D	1.01 [42101]	Industrial
8319300	D	1.01a [13822]	Industrial
8319300	D	1.02 [62038]	Industrial

## 1.7 Sealing Provision

Provision is made for sealing the calibration adjustment after each calibration, as follows:

- (a) Set the VERIFY-DATE function to be less than 12 months from the date of calibration.
- (b) Set the USE-VERIFY function to 'ON'.
- (c) Typically, a sealing plate is then attached over the calibration access port using two screws which also attach the RS232 port (Figure 2) and a destructible adhesive label is then placed over the two screws.

## 1.8 Descriptive Markings and Notices

Instruments are marked with the following data, on one or more nameplates, in the form shown at right:

Manufacturer's mark, or name written in full	Draeger Safety Pacific P/L
Pattern approval number for the instrument	NMI 16/1/2
Serial number of the instrument	.....
Measurement range	0 – 0.500 g/210 L
Unit of measurement	0.001 g/210 L
Ambient temperature range	0 – 40°C
Power supply:	230 – 240 V AC, 50 Hz 12 V DC
Warm-up	12 minutes
Calibration interval	1 year

## 2. Description of Variant 1

**approved on 10/03/09**

With an Ethernet port (Figure 3).

### TEST PROCEDURE

Instruments shall be tested in accordance with any relevant tests specified in document *NSC 126, July 2003, Pattern approval specifications for evidential breath analysers*.

In addition, check the software version number. The version number is displayed pressing 'v' on the keyboard.

#### Maximum Permissible Errors at Verification

The maximum permissible errors for evidential breath analysers are:

(i) **at initial verification:**

±0.004 g/210 L for all mass concentrations of alcohol < 0.080 g/210 L;

±5% of the measured concentration of alcohol for all mass concentrations of alcohol > 0.080 and < 0.400 g/210 L; and

±20% of the measured concentration of alcohol for all mass concentrations of alcohol > 0.400 g/210 L.

(ii) **in service:**

±0.006 g/210 L for all mass concentrations of alcohol < 0.080 g/210 L;

±8% of the measured concentration of alcohol for all mass concentrations of alcohol > 0.080 and < 0.400 g/210 L; and

±30% of the measured concentration of alcohol for all mass concentrations of alcohol > 0.400 g/210 L.

FIGURE 16/1/2 – 1



Dräger Model Alcotest 7110 MK V Portable Evidential Breath Analyser (Pattern & variant 1)

FIGURE 16/1/2 – 2



Showing Typical Sealing Plate (Pattern & variant 1)

FIGURE 16/1/2 – 3



Showing a Typical Ethernet Port (Variant 1)

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