OIML Member State Denmark		**OIML Certificate No.** **R51/2006-A-DK2-2023.03**

OIML CERTIFICATE ISSUED UNDER SCHEME A

OIML Issuing Authority

Name:	**FORCE Certification A/S**
Address:	Park Allé 345, 2605 Brøndby, Denmark
Person responsible:	Per Rafn Crety

Applicant

Name:	**Marel Iceland ehf**.
Address:	Austurhraun 9
	210 Gardabear
	Iceland

Manufacturer **Marel Iceland ehf.**

Identification of the certified type *(the detailed characteristics will be defined in the additional pages)*

M2400-IWU-xLC

Designation of the module *(if applicable)*

Automatic catchweighing weighing instrument

This OIML Certificate attests the conformity of the above identified type (represented by the sample(s) identified in the OIML type evaluation report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

OIML R 51-1, Edition (year): 2006

For accuracy class (if applicable)**: Y(a)**

This OIML Certificate relates only to metrological and technical characteristics of the type of measuring instrument covered by the relevant OIML Recommendation identified above.

This OIML Certificate does not bestow any form of legal international approval.

The conformity was established by the results of tests and examinations provided in the associated OIML reports:

Type examination report: No. 121-35487.10, dated 01 August 2023, that includes 66 pages

Type evaluation report: No. 121-35487.90.20, dated 09 October 2023, that includes 19 pages

The technical documentation relating to the identified type is contained in documentation file:

121-35487

OIML Certificate History

Revision No.	Date	Description of the modification
Initial version	16 November 2023	-

Identification, signature and stamp
The OIML Issuing Authority
FORCE Certification A/S

Date: 16 November 2023

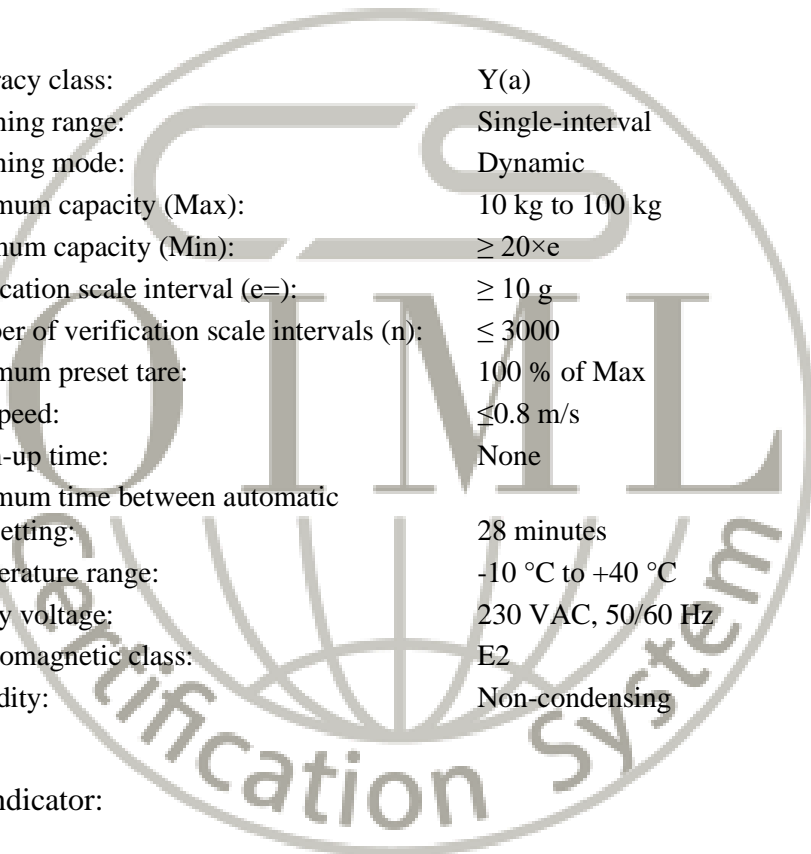Jens Hovgård Jensen
Certification Manager

Important note: Apart from the mention of the Certificate's reference number and the name of the OIML Member State in which the Certificate is issued, partial quotation of the Certificate and of the associated OIML type evaluation report(s) is not permitted, although either may be reproduced in full.

Descriptive annex

Description

The automatic catch-weighing instrument is a belt weighing scale designated M2400-IWU-xLC where x represents the number of load cells in the instrument and is intended for dynamic weighing. It consists of an electronic weighing indicator M2400 and a load receptor with 1 or 2 load cells (often designated Inline Weigher) or 4 load cells (often designated MaxiweigherII). The instrument can operate as a price labeller.

Technical Data

- Accuracy class: $Y(a)$
- Weighing range: Single-interval
- Weighing mode: Dynamic
- Maximum capacity (Max): 10 kg to 100 kg
- Minimum capacity (Min): $\geq 20 \times e$
- Verification scale interval (e=): ≥ 10 g
- Number of verification scale intervals (n): ≤ 3000
- Maximum preset tare: 100 % of Max
- Belt speed: ≤ 0.8 m/s
- Warm-up time: None
- Maximum time between automatic zero-setting: 28 minutes
- Temperature range: -10 °C to +40 °C
- Supply voltage: 230 VAC, 50/60 Hz
- Electromagnetic class: E2
- Humidity: Non-condensing

Technical data, indicator:

- Apportionment factor: 0.25 µV
- Exitation voltage: ± 3VDC bipolar (6V effective)
- Maximum input impedance: 87 ohm
- Minimum input impedance: 1100 ohm

Software

The firmware of M2400 is displayed during start up and can also be found in the Main menu/Identity.

The software version is given on the form a.bb-cc where a reflects major changes including the legal software, bb reflects major bug fixes not affecting the legal software and cc reflects minor bug fixes.

Approved firmware versions are 1.01-00 or higher.

The firmware also lists the version of the weighing module. Approved version is 100.

Devices

- Power up test
- Initial zero setting device (max. 20 % of Maximum capacity)
- Semi-automatic zero setting device (max. 4 % of Maximum capacity)
- Automatic zero setting device (max. 4 % of Maximum capacity)
- Zero tracking device (max. 4 % of Maximum capacity)
- Zero annunciator
- Preset tare device
- Storing preset tare
- Preset Tare indication
- Tare (NET) annunciator
- Stable annunciator for empty belt
- Extended indicating device (service mode only)
- Gravity compensation
- Detection of significant fault
- DSD built in data storage device (Alibi)
- Transmission of measurement data to an external data storage device (Alibi), Marel M12-DSD or another certified external alibi storage device
- Transmission of measurement data to an external "Marel Secure Print" application software (Evaluation Certificate No. DK0199-16.07)
- Price and Weight labelling when used with Marel Secure Print

Interfaces

- RS232 (2x)
- CAN
- USB
- Ethernet

Load cells

Inline Weigher models with one load cell (1LC model) or two load cells (2LC model):
Flintec PCB C3

MaxiweigherII with 4 (4LC model) load cells:

Flintec SB6 C3 or other certified load cells with same or better specifications

Sealing Measures

There are two alternative methods for sealing the load cells to the indicator.

- Either:

  The load cell serial numbers are stored in a CON protected memory in M2400, the serial numbers can be viewed under Menu / Audit and should be identical to those marked on the load cells,

- Or:

  access to the load cell connection is physically prevented by sealing the M2400 indicator enclosure with a tamperproof sticker or a wire and plumb seal.

On load receptors using four load cells, the junction box, TB-4, is always sealed by using a tamperproof sticker placed on one of its sides.

There are two alternative methods to protecting the legally relevant parameters.

- Either:

  The instrument is secured by two event counters, CAL and CON, which are incremented each time the calibration or sealed configuration parameters are changed. At verification the value of the two event counters is written on a brittle plastic sticker - sealed with a verification mark - next to it. If the value of the CAL or CON differs from the one written at verification time, the seal is broken.

- Or:

  the access control is set to "Locked" either by switch the DIP switch S2-SEAL to the "ON" position, or by setting the Access control in menu Login to "Locked". When Access control is set to "Locked" no changes can be done to CON or CAL parameters. The Access level "Locked" can only be changed by accessing the S1 push bottom on the PCB. By sealing the M2400 indicator enclosure with a tamperproof sticker or a wire and plumb seal the access level cannot be adjusted without breaking a seal.

Pictures
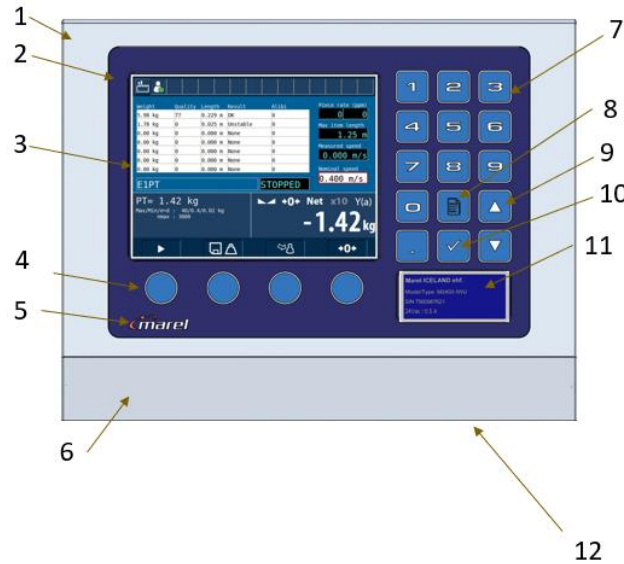
Item in figure 17	Description	Function
1	M2400	Enclosure
2	Display area	Main display - user interface
3	Main screen	Main screen,
4	Programmable function key	Four programmable function keys for operating the indicator
5	Manufacturing logo	Marel logo, Indicator type and place of manufacturing.
6		Place for markers and stickers
7	Keypads	Numerical 0 to 9 and the decimal point. Used for entering numerical data.
8	Page key	To cycle between pages and as a page back key.
9	Up and down key	Used for navigating menu items and marking selections.
10	Check key	The check key is used to enter menu and confirming data selection.
11	Rating plate	Indicator rating plate
12	Cable glands	

Figure 1: Indicator front view

Item in figure 18	Description	Function
1	Status bar	Used for running indication, service level when logged in and error symbols
2	Product list	List of last seven products weighed. Indicates weight, quality, length, result (whether weighing has been successful) and alibi (unique ID for each product)
3	Program name	Name of any user grading program if active
4	Pre-set tare	Shows current pre-set tare.
5	Capacity	Current set capacity: Max/Min/e=d and verification scale intervals. Can never be larger than marked on load receptor.
6	Start/Stop	In picture – Stop symbol is shown (if stopped start)
7	Status	READY, if running and ready to weigh STOPPED if belt not running.
8	Piece rate	Left most, calculated current piece rate (units/min) Right most, recommended piece rate (units/min) for current settings
9	Max Item length	Recommended maximum length of product for current settings.
10	Measured speed	Measured current belt speed (m/s)
11	Nominal speed	User setpoint for belt speed (m/s)
12	Primary weight display	Primary weight display.
13	Service level	Function key, when pressed will take user to service level login page. Password: 62735.

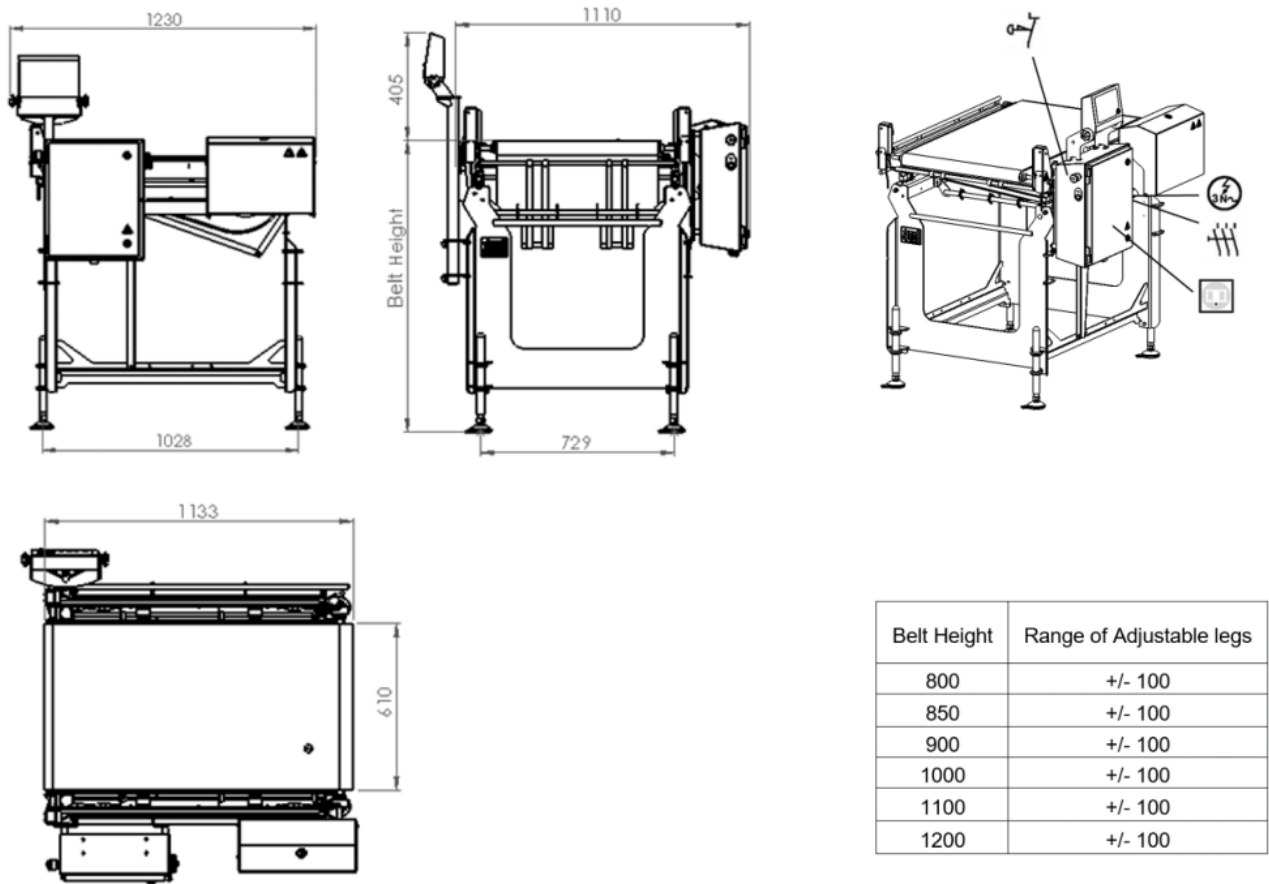**Figure 2:** Main screen of user interface
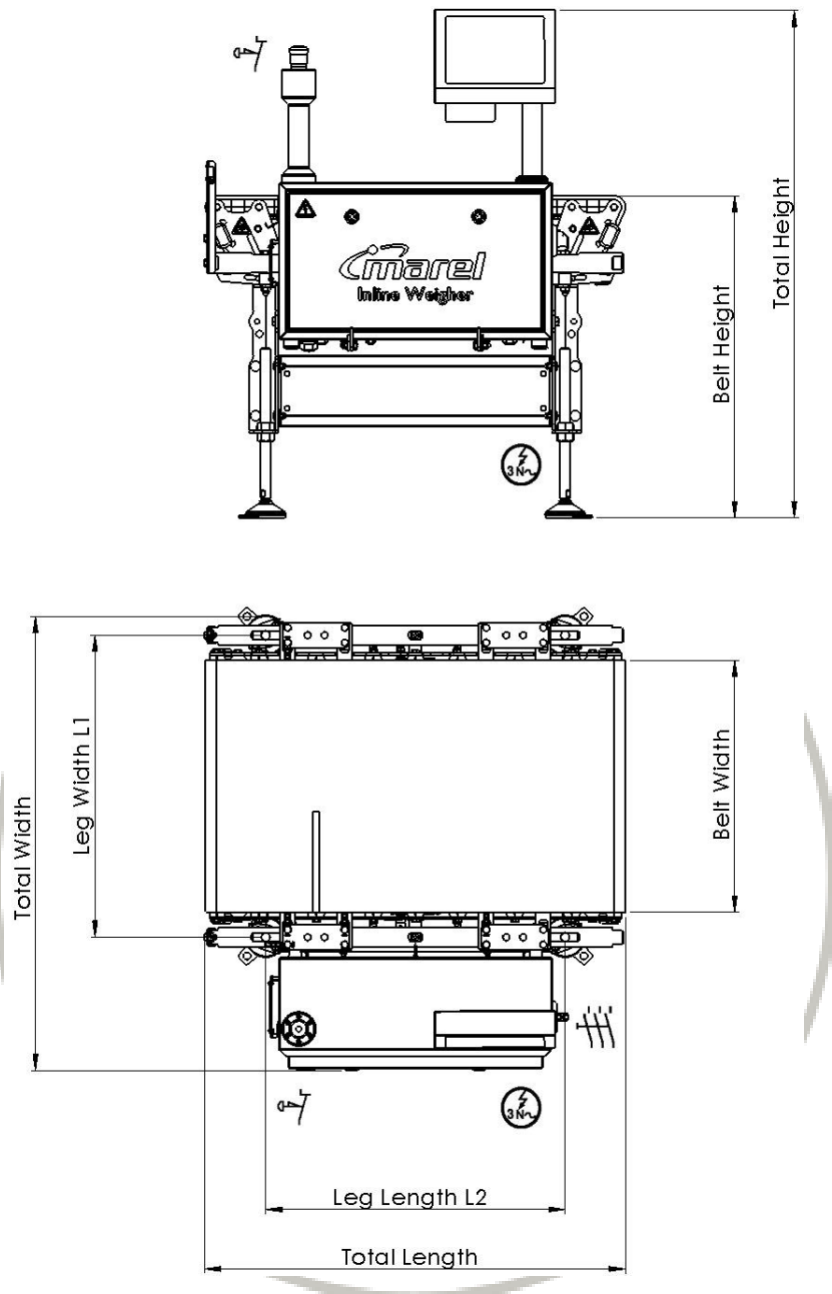
Heitht	[mm]	Belt Height	Total Height Inline	Total Height Standalone
	H0000	335	665	710
	H0650	650	980	1.025
	H0850	850	1.180	1.225
	H1050	1.050	1.380	1.425
	H1250	1.250	1.580	1.625

Length	[mm]	Total Length	Leg Length L2
	L0600	646	528
	L0800	846	603
	L1000	1.046	703
	L1200	1.246	778

Width	[mm]	Belt Width	Leg Width L1	Total Width Inline	Total Width Standalone
	W400	406	507	767	817
	W500	508	609	869	919
	W600	610	711	971	1.021
	W700	711	812	1.072	1.122

Figure 3: Layout and dimensions of Inline Weigher, 1 or 2 load cells

Belt Height	Range of Adjustable legs
800	+/- 100
850	+/- 100
900	+/- 100
1000	+/- 100
1100	+/- 100
1200	+/- 100

NOTE: all dimensions are in millimetres (mm)

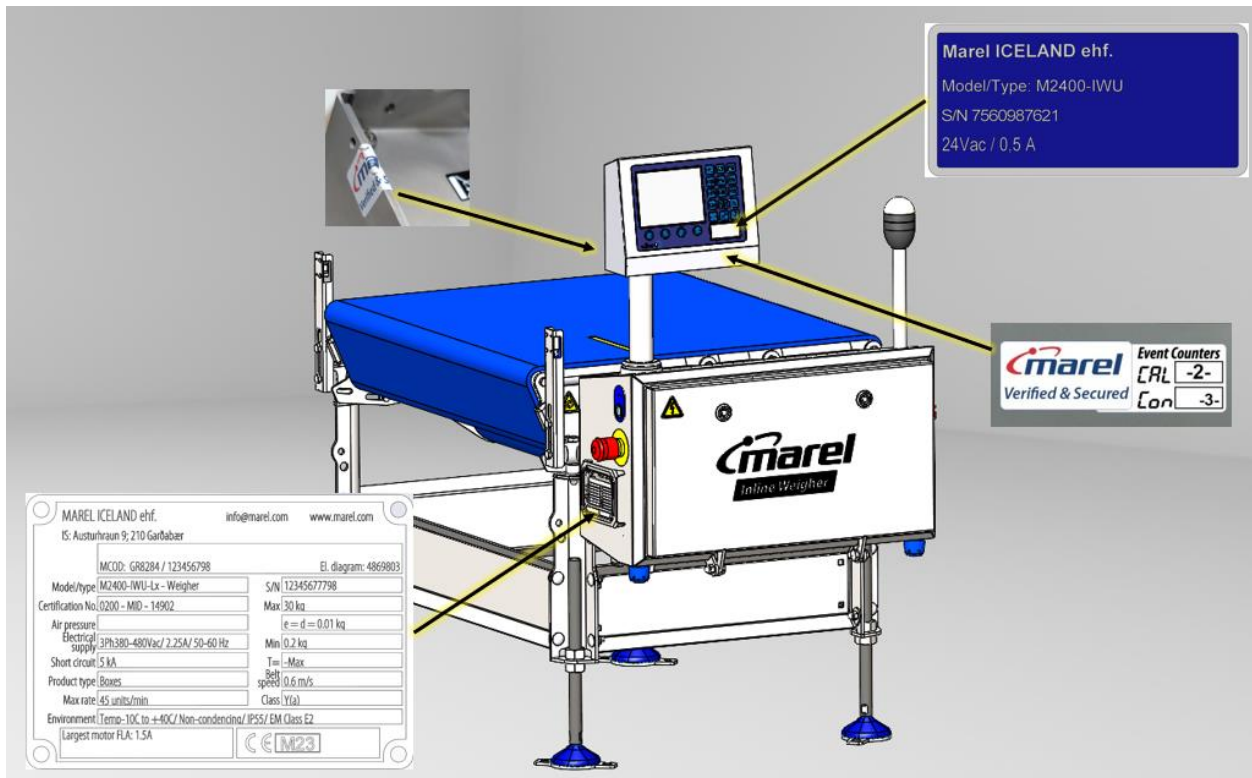**Figure 4:** Layout and dimensions of MaxiweigherII, 4 load cells

Figure 5: Verification and label overview.

Figure 6: Sealed TB-4 box