



OIML Certificate

OIML Member State
The Netherlands

Number R60/2017-A-NL1-22.15 revision 0
Project number 2604443
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Issuing authority

NMi Certin B.V.
Person responsible: M.Ph.D. Schmidt

Applicant and
Manufacturer

Ningbo Optima Scale Co., Ltd
No. 326 Yuji Road, Zhenhai
Ningbo
China

Identification of the
certified type

A **shear beam load cell**, with strain gauges.
Registered trade name : Optima Scale
Type : OP-310

Characteristics

See next page

This OIML Certificate is issued under scheme A.

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

OIML R 60 - Edition 2017 (E) for accuracy class C

This Certificate relates only to the metrological and technical characteristics of the type of measuring instrument covered by the relevant OIML International Recommendation above-identified. This Certificate does not bestow any form of legal international approval.

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Issuing Authority

NMi Certin B.V., OIML Issuing Authority NL1
8 April 2022

Certification Board

NMi Certin B.V.
Thijsseweg 11
2629 JA Delft
The Netherlands
T +31 88 6362332
certin@nmi.nl
www.nmi.nl

This document is issued under the provision that no liability is accepted and that the applicant shall indemnify third-party liability.

The notification of NMi Certin B.V. as Issuing Authority can be verified at www.oiml.org

This document is digitally signed and sealed. The digital signature can be verified in the blue ribbon on top of the electronic version of this certificate.



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

- No. NMI-2604443-01 dated 6 April 2022 that includes 51 pages;
- No. NMI-2604443-02 dated 6 April 2022 that includes 46 pages.

Characteristics of the load cell:

Characterization of load cell capabilities	Analog-passive load cell	
Maximum capacity (E_{max})	300 kg up to 1000 kg	1000 kg up to and including 5000 kg
Minimum dead load	0 kg	
Accuracy Class	C	
Rated Output	2,4 – 3,0 mV/V	
Maximum number of load cell intervals (n) ⁽¹⁾	3000	
Ratio of minimum LC Verification interval ⁽¹⁾ $Y = E_{max} / V_{min}$	10000	6000
Ratio of minimum dead load output return ⁽¹⁾ $Z = E_{max} / (2 * DR)$	6000	3000
Input impedance	385 Ω \pm 15 Ω	
Temperature range	-10 °C / + 40 °C	
Fraction p_{LC}	0,7	
Humidity Class	CH	
Safe overload	150 % of E_{max}	
Output impedance	350 Ω \pm 3 Ω	
Recommended excitation	5 - 12 V AC / DC	
Excitation maximum	15 V AC / DC	
Transducer material	Alloy steel	
Atmospheric protection	Silicon rubber	

Remark:

1. The characteristics for n_{max} , Y and Z can be reduced separately.

Each load cell produced is provided with an accompanying document with information about its characteristics.

The above identified Type (represented by the sample(s) identified in the OIML Test Report) have been found to comply with the additional national requirements established by the United States of America (NIST Handbook 44 and NCWM Publication 14), included in the Utilizer Declaration:

- R 60 OIML-CS rev.2 Additional requirements from the United States Accuracy class III L;
- R 60 OIML-CS rev.2 Additional requirements from the United States Marking requirements.



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Revision History

Revision	Date	Change(s)
0	2022-04-08	Initial issue