

Issued by	NMi Certin B.V. Hugo de Grootplein 1 3314 EG Dordrecht The Netherlands
In accordance with	Paragraph 8.1 of the European Standard on Metrological aspects of non-automatic weighing instruments EN 45501:1992/AC:1993 and by application of the OIML International Recommendation R 60 (Edition 2000). The applied error fraction $p_i$ , meant in the paragraph 3.5.4. of the standard is 0.7.
Applicant	Vishay Transducers 8a Hazoran St. Netanya, 42506 Israel
In respect of	A <b>bending beam load cell</b> , with strain gauges, tested as a part of a weighing instrument. Manufacturer : Vishay Transducers Type : 380 and 380W
Characteristics	$E_{max}$ : 7.5 kg up to and including 250 kg Accuracy class : C  In the description number TC7689 revision 0 further characteristics are described.
Description and documentation	The load cell is described in the description number TC7689 revision 0 and documented in the documentation folder TC7689-1, appertaining to this test certificate.
Remarks	Summary of the test involved: see Appendix number TC7689 revision 0.

Issuing Authority

**NMi Certin B.V. Notified Body number 0122**

29 January 2010

  
C. Oosterman  
Head of Certification Board

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## 1 General information about the load cell

All properties of the load cell, whether mentioned or not, may not be in conflict with the standard mentioned in the test certificate.

### 1.1 Essential parts

Description	Drawing number	Rev.	Remarks
PB-380	07012010A	A	
PBW-380	07012010B	A	
Engineer Product specification for: Model 380	07012010C	2	
Engineer Product specification for: Model 380W	07012010D	2	

Cable:

- The load cell is provided with a 4-wire system.  
The cable length has to be approximately 1.5 meters.  
The cable length shall not be modified.
- The cable is a non-shielded flat cable.

### 1.2 Essential characteristics

Type	380 and 380W							
Maximum capacity $E_{max}$	7.5 kg up to 37.5 kg				50 kg up to and including 250 kg			
Humidity classification	CH							
Temperature range	-10 °C / 40 °C							
Accuracy class	C3	C3-MR10	C3-MR15	C3-MI5.7	C4	C4-MR10	C4-MR15	C4-MI4.3
Maximum number of load cell verification intervals $n_{max}$	3000				4000			
Ratio of minimum LC verification interval $Y = E_{max} / v_{min}$	7500	10000	15000	15000	7500	10000	15000	15000
Ratio of minimum dead load output return $Z = E_{max} / 2 * DR$	----			5700	----			4300

The characteristics for  $n_{max}$  and  $Y$  can be reduced separately.  $Z$  is proportional or equal to  $n_{max}$

Each produced load cell is supplied with information about its characteristics.



# Description

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Minimum dead load	: 0 kg
Safe overload	: 200 % of $E_{max}$
Rated Output	: 1 mV/V $\pm$ 0.001 mV/V
Input impedance	: 1160 $\Omega$ $\pm$ 15 $\Omega$
Output impedance	: 1000 $\Omega$ $\pm$ 10 $\Omega$
Recommended excitation	: 10 V DC/AC
Excitation maximum	: 15 V DC/AC
Transducer material	: Aluminum Anodize
Atmospheric protection	: RTV Potting

## 1.3 Essential shapes

The load cell is built according to drawing:

- PB-380, drawing number 07012010A:
- PBW-380, drawing number 07012010B.

The data plate is secured against removal by sealing or will be destroyed when removed. The data plate mentions at least the information and markings as described in the OIML R60 document. In the countries where it is mandatory the load cell should bear this test certificate number: TC7689.

Securing:

The connecting cable of the load cell or the junction box is provided with possibility to seal.

Tests performed for this test certificate:

Test	Institute	type, version, remarks
Temperature test and repeatability (20, 40, -10 and 20 °C)	NMi Certin B.V.	Type 380 7.5 kg C3 and 50 kg C4
Temperature effect on minimum dead load output (20, 40, -10 and 20 °C)	NMi Certin B.V.	Type 380 7.5 kg C3 and 50 kg C4
Creep (20, 40 and -10 °C)	NMi Certin B.V.	Type 380 7.5 kg C3 and 50 kg C4
Minimum dead load output return (20, 40 and -10 °C)	NMi Certin B.V.	Type 380 7.5 kg C3 and 50 kg C4
Barometric pressure effects at room temperature	NMi Certin B.V.	Type 380 7.5 kg C3
Damp heat, cyclic: marked CH (or not marked)	NMi Certin B.V.	Type 380 50 kg C4