



## WEIGH-IN-MOTION

### Solution to road damage by getting rid of overloading

Weigh-In-Motion (WIM) is a system for weighing vehicles with no impact on traffic flow and the most complex solution for data collection in transportation. It helps with traffic management, road maintenance planning and can be applied to actively protect the road infrastructure.

Our solution was the first in the world certified for direct enforcement - another step towards elimination of costly and dangerous overloading. CAMEA WIM is a sensor independent solution and can satisfy the customer's needs and tender requirements in almost all cases.

### Features

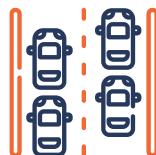
- ✓ Most direct enforcement stations worldwide
- ✓ Weighing sensor independence
- ✓ Low-speed and high-speed package
- ✓ Speed and dimension enforcement
- ✓ Measuring between lanes, road shoulder, etc.
- ✓ Measuring in both directions
- ✓ Tire pressure measurement
- ✓ Axle weight enforcement
- ✓ SW-defined free-flow weighing
- ✓ Dual tire detection
- ✓ Wide range of recognized classes
- ✓ Multiple classification schemes (up to 200+ classes)
- ✓ Advanced validation process
- ✓ Centralized remote diagnostics
- ✓ Central data server support
- ✓ Tire footprint reconstruction

### Benefits



#### Better Road Quality

Heavy vehicles are the most significant factor in damaging roads. Making sure they are loaded properly is key for road preservation.



#### Fluent Traffic

Weighing in motion helps eliminate problems of long queuing on weigh stations and slow, heavy vehicles influencing traffic flow.



#### Better Road Safety

Overloaded trucks have worsened handling and a long braking distance, and therefore are a threat to other traffic participants.

# Applications

CAMEA WIM is deployed in order to collect traffic stats and to protect roads through enforcement. The applications vary in the system setup, resulting in different outputs and accuracies.



## Statistics

The system is a great source of valuable traffic data, such as the accurately calculated road stress. The application serves as a good information base for the next steps in infrastructure planning.



## Pre-Selection

To tackle time-wasting queues at static scales, all vehicles are first weighed at full speed. Only those that seem to be overloaded are subsequently diverted for further weight measurement.



## Direct Enforcement

The most efficient tool in road protection is enforcing directly without any necessity to build a static scale and to employ its staff. Violators are fined without affecting traffic fluency at all.

# Technical Parameters

	System Limits	Certified in Czech Republic*	OIML Certificate (10F)
Speed Range	3 to 255 km/h	5 to 140 km/h	5 to 140 km/h
Tolerance (Gross Weight)	2.5 % (verification)** 5 % (operation)**	5 % (verification) 7 % (operation)	5 % (verification) 10 % (operation)
Resolution (Gross Weight)	1 kg	≤ 50 kg	100 kg
Capacity (Gross Weight)	min. 1,000 kg max. unlimited	min. 2,000 kg max. unlimited	min. 1,000 kg max. 100,000 kg
Tolerance (Group of Axles, Single Axle, Axle of a Group)	4 % (verification) 8 % (operation)**	11 % (verification) 15 % (operation)	8 % (verification) 16 % (operation)
Resolution (Group of Axles, Single Axle, Axle of a Group)	1 kg	≤ 20 kg	100 kg
Capacity (Group of Axles, Single Axle, Axle of a Group)	min. 500 kg max. 30,000 kg	min. 500 kg max. 20,000 kg	min. 500 kg max. 30,000 kg
Sensor Technologies	Quartz, Piezo Strip, Load Cell Strain Gauge, Digital***	CAMEA US-PQ, Kistler Lineas	CAMEA US-PQ, Kistler Lineas

\* Example of parameters by the Czech Metrology Institute, local requirements may vary based on the country's legislation.

\*\* System accuracy depends on the road quality, sensor technology, the number of sensors used and other conditions. Read more in [this article](#).

\*\*\* The system is independent of the weighing sensor technology and vendor.

# System Components



Measurement Unit



ANPR Camera



Weighing Sensors



Software