TEC GROUP

FARD IRAN

Est. 1958

Fard Iran Specializes in Design and Production of Precision Instruments, Weighing and Measurement Technology, and Intelligent Transportation Systems

www.fardiran.com/en

Ahead of ITS Time

TEC GROUP

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Est. 1958

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Fard Iran Industrial Group

More Than 65 Years of Experience in Weighing Systems

Established in 1958, Fard Iran is the first in the field of weighing and measurement systems in Iran and has proudly remained the leading manufacturer of technologically advanced static and dynamic weighing solutions. We offer a wide range of standard and customized products, including:

- **Truck Scales**
- **Railroad Track Scales**
- **Weighing in Motion**
- **Intelligent Transportation Systems**

With over 65 years of experience, Fard Iran has a proven record of customer satisfaction in both domestic and international markets. This has been achieved by a highly competent team of more than 500 professionals who are committed to:

- **QUALITY:** Our products satisfy the highest standards in the industry
- **ACCURACY:** Our products are well-known because of their precision in measurement
- **ACCOUNTABILITY:** Our team is dedicated to offering the best experience in customer service

The company also boasts an impressive factory with state-of-the-art equipment which is spread over 43,000 square meters of private land, which makes it one of the largest facilities in this industry worldwide.

Applying the latest technology merged with the wisdom of industry experience, Fard Iran has positioned itself as a key player in the world of weighing and measurement systems and aspires to maintain its contribution as a leader in the future of the weighing industry.

The five main components of a truck scale are:

1. **Deck (Platform)**
2. **Load Cell**
3. **Foundation**
4. **Junction Box**
5. **Indicator (Terminal)**

1. Deck (Platform)

This is the structure that provides the driving surface for the trucks and must transfer the load to the load cells (weight sensors) accurately. Regarding the position of the deck on the ground, vehicle scales can be installed over a pit or above ground. These decks are available with one of two platform materials; steel or concrete:

Steel Deck:

Manufactured and built from high-quality steel with an unmatched design, the steel platforms made by Fard Iran provide extra strength and accuracy.

Prefabricated Concrete Deck:

Reinforced precast concrete that meets the rigorous standards of Fard Iran is used to build these platforms in the factory.

Our truck scales are available in a wide range of standard and customized configurations to suit your application needs.

2. Load Cell

These are the sensors that measure the weight on the scale and are a key component to the reliability of the scales. As each weight reading has an equivalent financial outcome proportionate to the amount of the product, choosing the best scale is heavily dependent on selecting the right load cell.

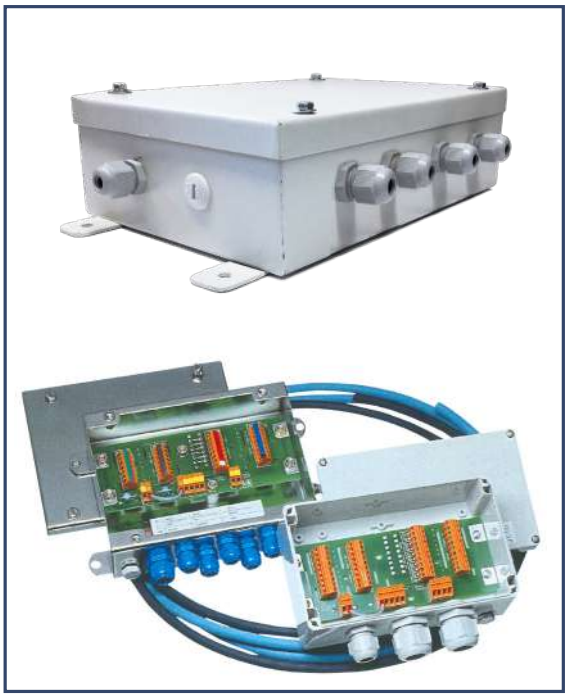
3. Foundation

The foundation plays an important role in the correct placement of the scale and, thus, the accuracy of the weight reading. Fard Iran offers two types of foundations:

1. **Prefabricated concrete foundation**: Precast concrete which is poured in the factory is used to build the foundation in a controlled environment resulting in high-quality concrete with great strength to hold the scale properly.
2. **Site-cast concrete foundation**: The concrete is poured and cured on site, based on precise drawings offered by the company. The process can be executed by the company professionals or the customer.

The precast concrete foundations are also available in different types to suit your application needs. Consult with our experts to choose a foundation that matches your choice of truck scale.

4. Junction Box



A Junction Box (J-Box) receives the signals from multiple load cells and combines these signals into a single digital value to be sent to the indicator. A variety of junction box options such as being waterproof is available based on customers' needs.

5. Indicator

This is the weight-indicating instrument that is offered in different models. When deciding on a weight indicator, our team can show you a number of models with special features that make the operation and use of your new scale quick and easy.

Please visit our website: www.fardiran.com/en for more information.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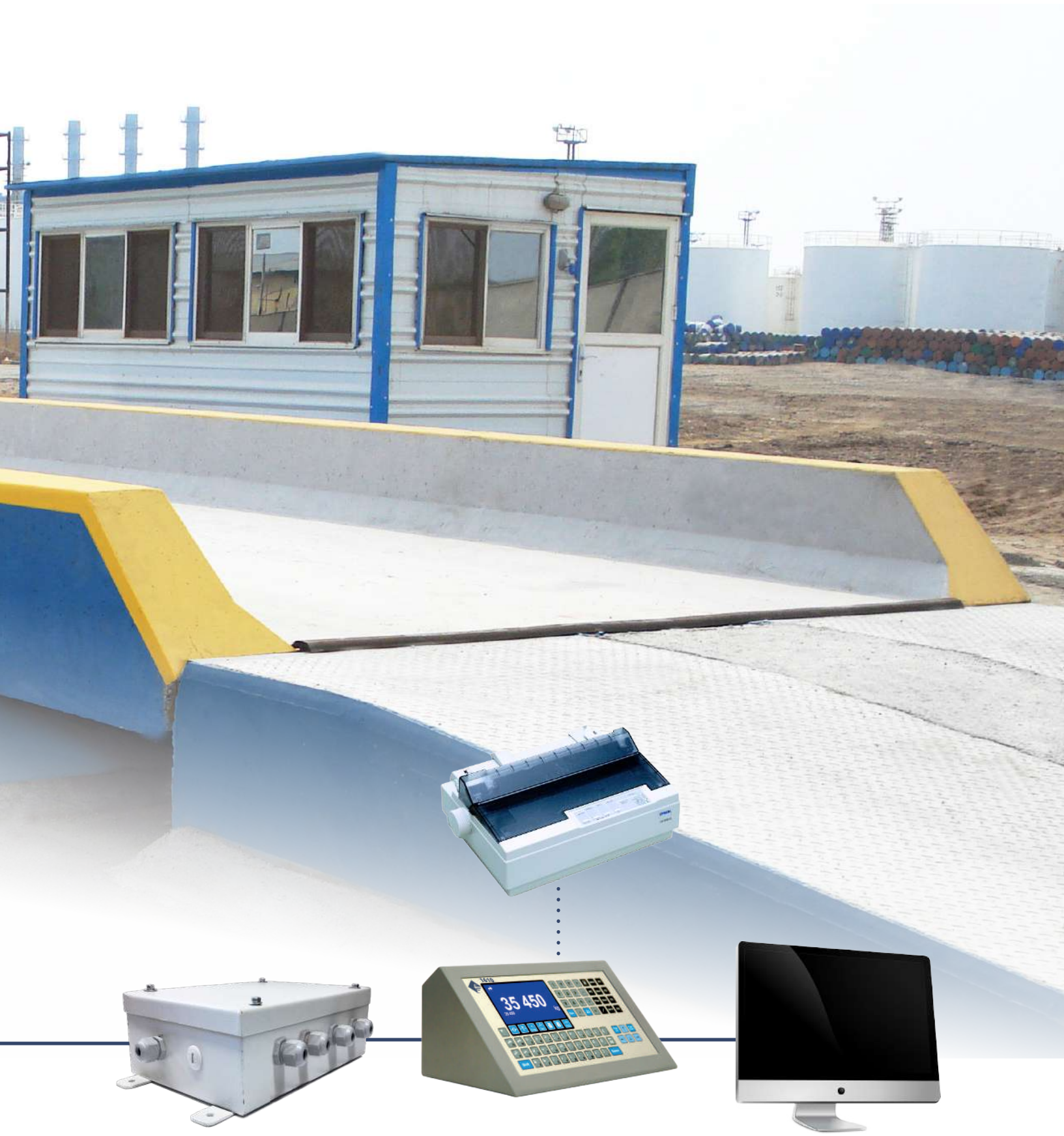
EST.1958


35 450

Prefabricated Concrete Deck Truck Scales

To build this class of truck scales, the concrete is poured and cured in the factory in a controlled environment. Fard Iran's prefabricated concrete platforms are made under the supervision of experts in the company's facilities for optimum strength. Utilizing the latest technologies, the company employs a cost-effective approach to build a durable platform for an excellent scale.

To achieve this:

- The ponding method (in pools of water) is applied to cure concrete
- Water is desalinated by the latest available technologies
- The sand and gravel are washed properly to separate sediment
- Polypropylene fiber reinforced concrete is used
- High-quality rebar is used to reinforce the concrete and, thus, the scale

These truck scales which are available in a wide range of standard and customized configurations to suit customers' application needs, can be transported to the site quickly to be installed easily.

The main features of Fard Iran's prefabricated concrete truck scales are:

- High Tensile Strength Concrete Decks
- Extremely Durable Concrete Deck
- Resistance to Corrosion
- High Accuracy Over Time
- Relocation of the Scale is Possible
- Stainless Steel Load Cells
- Easy Load Cell Access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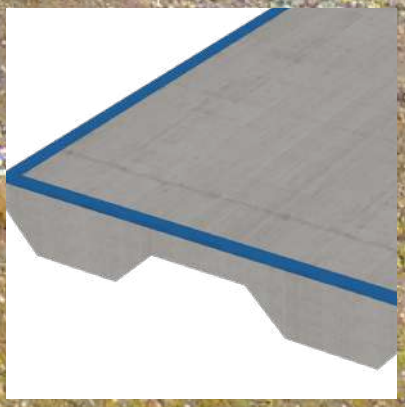
شرکت فرد ابران

P30

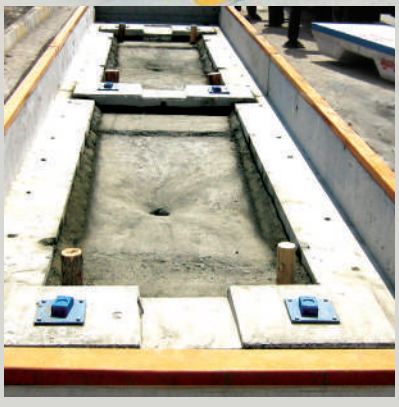
Prefabricated Concrete Deck Above Ground Truck Scale



Transportation	Required Crane	Can be offered with prefabricated ramps	Can be offered with prefabricated foundation	Curing Concrete	Excavation
Oversized	25 ton	Yes	Yes	Precast in the standard and controlled environment of the factory	70 cm At the base of the load cells

P40

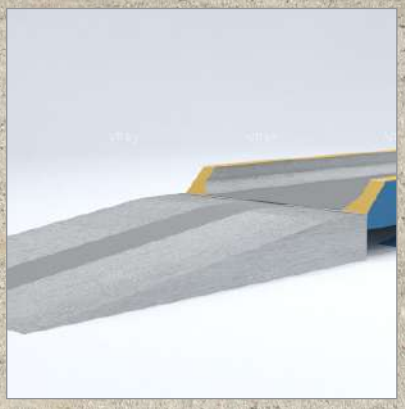
Prefabricated Concrete Deck Pit-Mounted Truck Scale

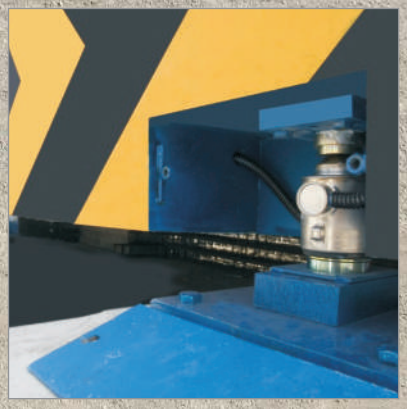


Transportation	Required Crane	Can be offered with prefabricated ramps	Can be offered with prefabricated foundation	Curing Concrete	Excavation
Oversized	25 ton	Not Needed	Yes	Precast in the standard and controlled environment of the factory	70 cm

P50

Prefabricated Concrete Deck Above Ground Truck Scale





Transportation	Required Crane	Can be offered with prefabricated ramps	Can be offered with prefabricated foundation	Curing Concrete	Excavation
Oversized	25 ton	Yes	Yes	Precast in the standard and controlled environment of the factory	30 cm At the base of the load cells

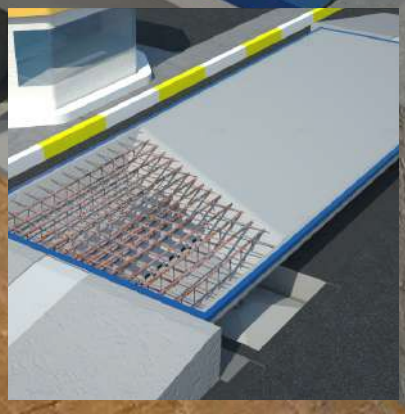
P51

Prefabricated Concrete Deck Above Ground Truck Scale

Transportation	Required Crane	Can be offered with prefabricated ramps	Can be offered with prefabricated foundation	Curing Concrete	Excavation
Oversized	25 ton	Yes	Yes	Precast in the standard and controlled environment of the factory	30 cm At the base of the load cells

C30

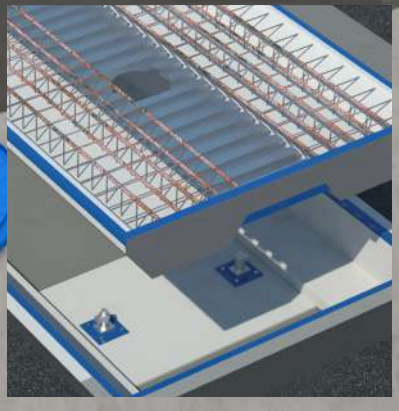
Prefabricated Concrete Deck Above Ground Truck Scale



Transportation	Required Crane	Can be offered with prefabricated ramps	Can be offered with prefabricated foundation	Curing Concrete	Excavation
Standard Size	6 ton	Yes	Yes	Half precast, half site-cast	30 cm At the base of the load cells

C40

Prefabricated Concrete Deck
Pit-Mounted Truck Scale



Transportation	Required Crane	Can be offered with prefabricated ramps	Can be offered with prefabricated foundation	Curing Concrete	Excavation
Standard Size	6 ton	Not Needed	Yes	Half precast, half site-cast	70 cm

Steel Deck Truck Scales

Built with heavy-duty structural steel made by well-known producers, Fard Iran's design uses more steel within the infrastructure of the scale than most competitor models for a stronger weighbridge. Furthermore, the whole process of cutting, welding, surface preparation, and painting of the steel is done according to Fard Iran's strict standards, resulting in a superior scale.

These truck scales which are available in a wide range of standard and customized configurations to suit customers' application needs, can be transported to the site quickly to be installed easily.

The main features of Fard Iran's steel deck truck scales are:

- Extremely Strong
- Durable Industrial-level Painting
- Designed with Modeling Software
- Cut and Welded with The Latest Technologies
- Relocation of the Scale is Possible
- Stainless Steel Load Cells
- Easy Load Cell Access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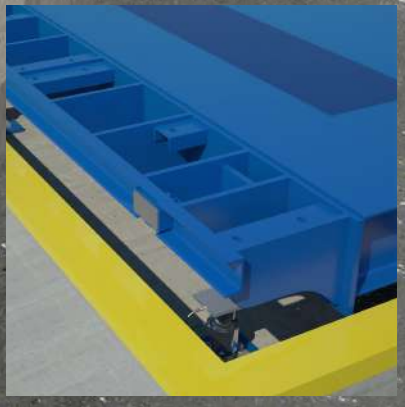
M10

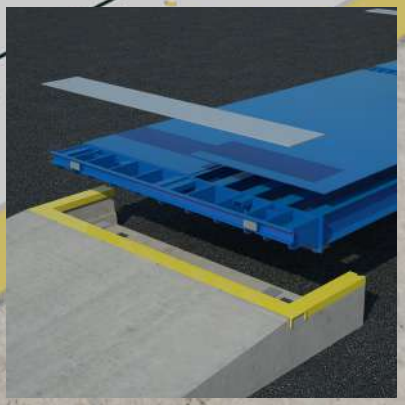
Steel Deck Above Ground Truck Scale



Transportation	Required Crane	Can be offered with prefabricated ramps	Can be offered with prefabricated foundation	Excavation
Oversized	6 ton	No	Yes	30 cm At the base of the load cells

M20

Steel Deck Pit-Mounted Truck Scale



Transportation	Required Crane	Can be offered with prefabricated ramps	Can be offered with prefabricated foundation	Excavation
Oversized	6 ton	Not Needed	Yes	70 cm

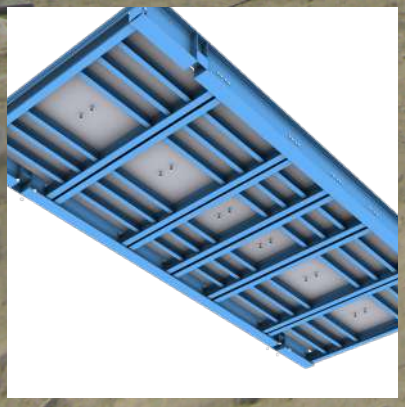
M40

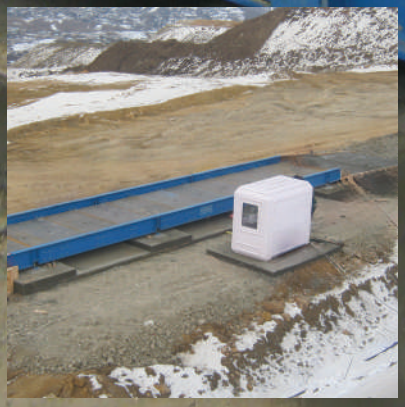
Steel Deck Pit-Mounted Truck Scale

Transportation	Required Crane	Can be offered with prefabricated ramps	Can be offered with prefabricated foundation	Excavation
Standard Size	5 ton	Not Needed	No	200 cm

M50

Steel Deck Above Ground Truck Scale





Transportation	Required Crane	Can be offered with prefabricated ramps	Can be offered with prefabricated foundation	Excavation
Standard Size	5 ton	Yes	Yes	30 cm At the base of the load cells

Foundation

The scale's foundation is critical to the successful operation of the scale as it must be of sufficient strength to hold the scale and the maximum load that is weighed on it. Generally, truck scales are installed over a pit or aboveground concrete foundation. A pit foundation will require less installation area compared to an aboveground foundation, as longer approaches are typically required to enter the truck scale platform with an aboveground configuration.

There are two main available options:

1.Prefabricated foundation: Factory-poured concrete is used to build the foundation which results in high-quality concrete with great strength to hold the scale properly. The concrete is cured in a controlled environment by applying the ponding method to ensure the best foundation is constructed in order to hold an excellent scale. These foundations also offer the possibility of being relocated at a later time.

2.Site-cast foundation: Poured-in-place concrete is used in this type of foundation. The process can be executed by Fard Iran professionals or the customer. We will provide a set of foundation drawings that detail the construction of the foundation for the scale. It is crucial that the foundation be constructed in conformance with these drawings. As an example, an improperly positioned pier or insufficient reinforcing steel can ruin the installation and cause operational problems for what would be an otherwise excellent scale. As with any type of foundation, care should be taken to ensure that proper drainage techniques are employed to prevent the collection of water in or around the foundation.

Consult with our experts for a variety of other available options.

Prefabricated foundation

Site-cast foundation

Minebea intec

sartorius

Made in Germany

PHILIPS	gwt	sartorius	sartorius Minebea intec	Minebea intec
1952 - 1995 →	1996 - 1999 →	1999 - 2015 →	2015 - 2017 →	2017 - NOW

Load Cell

The scale platform is supported by multiple analog strain gauge load cells, which are the sensors that measure the weight on the scale. As the accuracy of the weight reading is heavily dependent on the quality of the load cell, it is of prime importance to choose the best option based on your application needs. Fard Iran offers a variety of load cells and our experts can help you choose the right option.

One of the most reliable and durable models available worldwide is the load cell model **PR6221** made by **Minebea intec** (previously known as Sartorius). This model is designed specifically for use in truck scales and its outstanding precision and long product lifetime cut service and calibration costs, and help reduce downtimes to a minimum. As a result, this is the load cell that we typically use in our vehicle scales to achieve the highest level of accuracy over a long period of time as we value our customers' time and money.

Some of the benefits of Minebea intec load cell **PR6221**:

- Optimum reliability
- Accurate measurement results for exact load billing
- Top fail-safe performance thanks to high lightning protection
- Optimum protection against waterlogging, frost, and deicing salt
- Developed for the harshest ambient conditions:
    1. Wide usable ambient temperature range: from -40°C to +95°C
    2. Withstands water immersion at a depth of 1.5 m for more than 10,000 hours

PR 6221/30t C3~C6

Technical Data

Maximum capacity	highest limit of specified measuring range	E_{max}	12.5	20	25	30	50	60	75	t
Max. usable load	upper limit for measurements	E_u	37.5	40	37.5	60	75	75	75	t
Destructive load	danger of mechanical destruction	E_d	> 75	> 100	> 75	> 150	> 150	> 150	> 150	t
Rated output	relative output signal at max. capacity	C_n	1	1	2	1	2	2.4	3	mV/V
	for accuracy classes C4, C5, C6 at $E_{max} \geq 60$ t							1.5	1.5	mV/V
	C5, C6 at $E_{max} \geq 50$ t						1.5	1.5	1.5	mV/V
Nominal deflection	max.elastic deformation under nominal load	s_{nom}	0.2	0.4	0.5	0.5	0.8	0.9	1.1	mm

Accuracy class			**C3**	**C4**	**C5**[1]	**C6**[1]	
Accuracy class			0.015	0.012	0.010	0.008	% E_{max}
Minimum dead load	lowest limit of specified measuring range	E_{min}	0	0	0	0	% E_{max}
Min.LC verification interval	minimum load cell verification interval	Y	14,000	20,000	20,000	20,000	
	($v_{min} = E_{max}/Y$) for E_{max} 12.5 t:	Y	14,000	18,000	–	–	
Deadload Return	factor for min. dead load output return	Z	6,000	8,000[2]	8,000[2]	8,000[2]	
	(DR = 1/2 E_{max}/Z) for E_{max} 12.5 t:	Z	6,000	6,000	–	–	
Tolerance on rated output	permissible deviation from rated output	d_c	< 0.07	< 0.07	< 0.07	< 0.07	% C_n
Zero output signal	load cell output signal under unloaded condition	S_{min}	< 1.0	< 1.0	< 1.0	< 1.0	% C_n
Repeatability error	max.change in load cell output for repeated loading	ε_R	< 0.005	< 0.005	< 0.005	< 0.005	% C_n
Creep, during 30 min	max.change in load cell output under nominal load	d_{cr}	< 0.015	< 0.0125	< 0.010	< 0.008	% C_n
Non-linearity	max. deviation from best straight line through zero	d_{Lin}	< 0.01	< 0.01	< 0.01	< 0.01	% C_n
Hysteresis	max. diff.in LC output between loading and unloading	d_{hy}	< 0.0165	< 0.0125	< 0.010	< 0.008	% C_n
Temperature effect on S_{min}	max. change of S_{min}/10 K ΔT over B_T referred to C_n	TK_{Smin}	< 0.01	< 0.007	< 0.007	< 0.007	%C_n/10 K
Temperature effect on C_n	max. change of C_n/10 K ΔT over B_T referred to C_n	TK_c	< 0.01	< 0.008	< 0.007	< 0.005	%C_n/10 K
Input impedance	between supply terminals	R_{LC}	1,080 ±10	1,080 ±10	1,080 ±10	1,080 ±10	Ω
Output impedance	between measuring terminals	R_O	1,010 ± 1	1,010 ± 1	1,010 ± 1	1,010 ± 1	Ω
	for accuracy classes C5 | C6 at E_{max} = 50 t		760 ± 1	760 ± 1	760 ± 1	760 ± 1	Ω
	C4 | C5 | C6 at E_{max} = 60 t		635 ± 1	635 ± 1	635 ± 1	635 ± 1	Ω
	C4 | C5 | C6 at E_{max} = 75 t		510 ± 1	510 ± 1	510 ± 1	510 ± 1	Ω
Insulation impedance	between measuring circuit and housing at 100 V_{DC}	R_{IS}	> 5,000	> 5,000	> 5,000	> 5,000	M Ω
Insulation voltage	between circuit and housing		100	100	100	100	V_{DC}
		Ex	500	500	500	500	V
Recommended supply voltage	to hold the specified performance	B_u	4 ... 24	4 ... 24	4 ... 24	4 ... 24	V
Max. supply voltage	permissible for continuous operation without damage	U_{max}	32	32	32	32	V
		Ex	25	25	25	25	V
Nominal ambient temp. range	to hold the specified performance	B_T	-10 ...+55	-10 ...+55	-10 ...+55	-10 ...+55	°C
Usable ambient temp. range	permissible for continuous operation without damage	B_{Tu}	-40 ...+95	-40 ...+95	-40 ...+95	-40 ...+95	°C
Storage temperature range	transportation and storage	B_T	-40 ...+95	-40 ...+95	-40 ...+95	-40 ...+95	°C
Permissible eccentricity	permissible displacement from nominal load line	S_{ex}	10	10	10	10	mm
Vibration resistance	resistance against oscillation (IEC68-2-6 Fc)		20 g, 100 h, 10 ... 150 Hz	20 g, 100 h, 10 ... 150 Hz	20 g, 100 h, 10 ... 150 Hz	20 g, 100 h, 10 ... 150 Hz	
Air pressure effect	influence of ambient air pressure on S_{min}	PK_{Smin}	< 420	< 420	< 420	< 420	g/kPa

[1]) not for E_{max} = 12.5 t
[2]) for nominal ambient temperature > 40°C is Z = 6,000
Definitions acc. to VDI | VDE 2637.
The technical data given here serve only as a product description and must not be interpreted as guaranteed characteristics in the legal sense.

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Minebea Intec

PR 6221
Truck Scale Load Cell

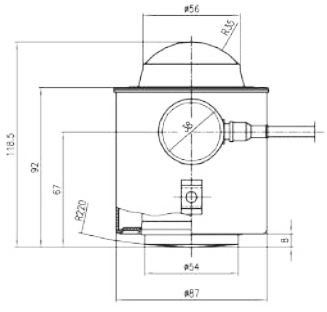
Made in Germany

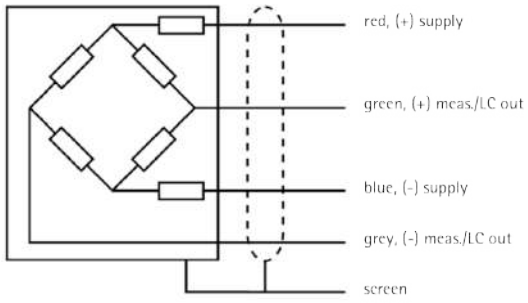
12.5 t... 75 t, type C3 | C4 | C5 | C6

- No corner adjustment necessary
- High overload capacity
- IP68 (1.5 m/10,000 hrs)
  IP69K (high pressure cleaning)
- Proven rocker-pin principle
- Best overvoltage protection
- Highest reliability
- 100% Maintenance free
- Ex-version available
- Patent-protected product features

STAR

Made in Germany





Order information

Type	Nominal load E_{max}	Version	Max. usable load E_{max} (in % of E_{max})	Destructive load (in % of E_{max})
PR 6221/12.5t	12.5 t	C3 | C4 C3E | C4E	300	> 600
PR 6221/20t	20 t	C3 | C4 | C5 | C6 C3E | C4E | C5E | C6E	200	> 500
PR 6221/25t	25 t	C3 | C4 | C5 | C6 C3E | C4E | C5E | C6E	150	> 300
PR 6221/30t	30 t	C3 | C4 | C5 | C6 C3E | C4E | C5E | C6E	200	> 500
PR 6221/50t	50 t	C3 | C4 | C5 | C6 C3E | C4E | C5E | C6E	150	> 300
PR 6221/60t	60 t	C3 | C4 | C5 | C6 C3E | C4E | C5E | C6E	125	> 250
PR 6221/75t	75 t	C3 | C4 | C5 | C6 C3E | C4E | C5E | C6E	100	> 200

CE Certificate N° E-02.02.C06

OIML R60/2000-ES1-09.01

Beslo

Made in Spain

Capacity

10 – 15 – 20 - 25 – 30 – 35 – 40 - 50 t

Compression load cell

Up to 6000 divisions OIML-R60

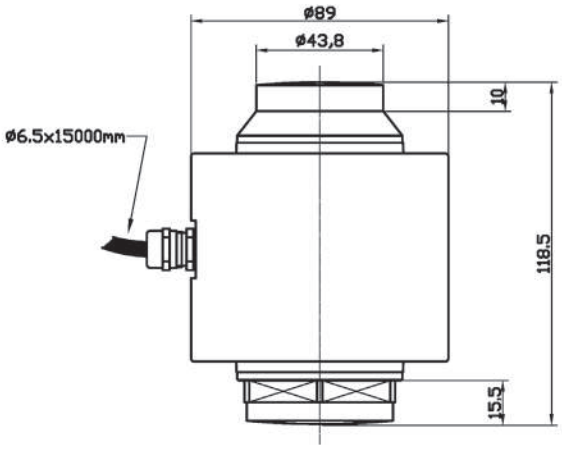
Fully stainless steel

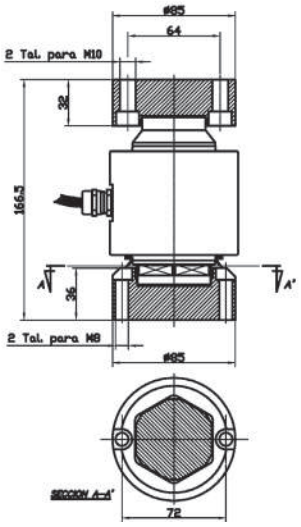
Fully welded. Protected against humidity IP-69K (DIN40050-9)

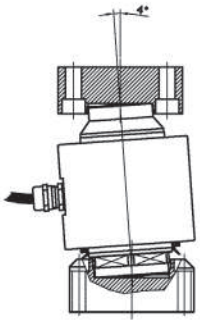
With gas dischargeers to protect against atmospheric discharges

Technical Data

Accuracy class	C3-C4-C5-C6
Rated output	2 ± 0.05% mV/V
Vmin	Emax/18000
Excitation Voltage	5÷15 V
Input Resistance	800 ± 3
Output resistance	700 ± 3
Temperature Compensation	-10° C / +40° C
Temperature limits	-30° C / +70° C
Insulation resistance	> 5000 M Ω



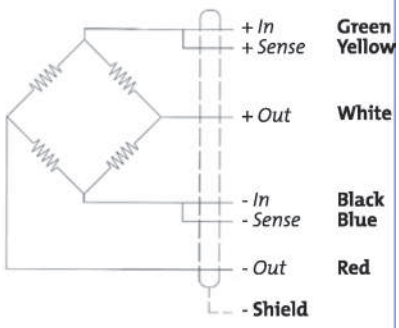




Bases Accessory

Connections

Optional Sense



CE Certificate N° E-02.02.C06

OIML R60/2000-ES1-09.01

LTC

Made in Spain

Capacity

10 - 15 - 20 - 25 - 30 - 35 - 40 - 50 t

compression load cell

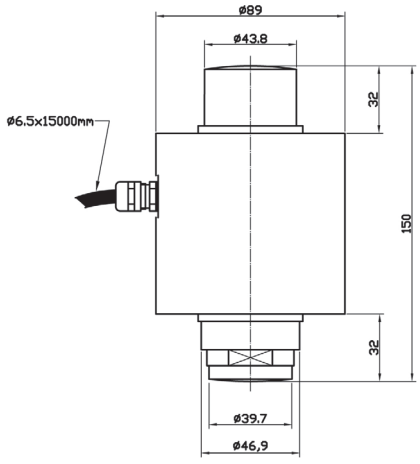
Up to 4000 divisions

Fully stainless steel

Fully welded. protected againnst humidity

IP-69K (DIN40050-9)

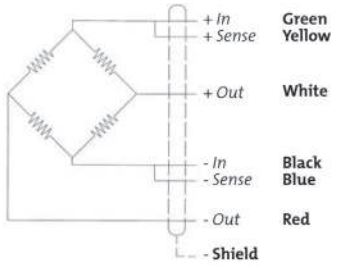
With gas dischargeers to protect against atmospheric discharges



Technical Data

Accuracy class	C3 / C4
Rated output	2± 0.05% mV/V
Vmin	Emax/14000
Excitation Voltage	5 15 V
Input Resistance	800±3
Output Resistance	700±3
Temperature Compensation	-10 C/+40 C
Temperature limits	-30 C/+70 C
Insulation resistance	>5000 MΩ

Connections
Optional Sense



Certificat
LOM 07ATEX2006

Certificate
N° E-02.02.C06

R60/2000-ES1-09.01

SP-A

Made in Spain

Capacidad Capacity Capacité
10 - 15 - 20 - 25 - 30 - 35 - 40 - 50 t

Célula de carga a compresión
Compression load cell
Capteur à compression

Hasta 4000 divisiones OIML-R60
Up to 4000 divisions OIML-R60
Jusqu'à 4000 divisions OIML-R60

Totalmente en acero inoxidable
Fully stainless steel
Totalement acier inoxydable

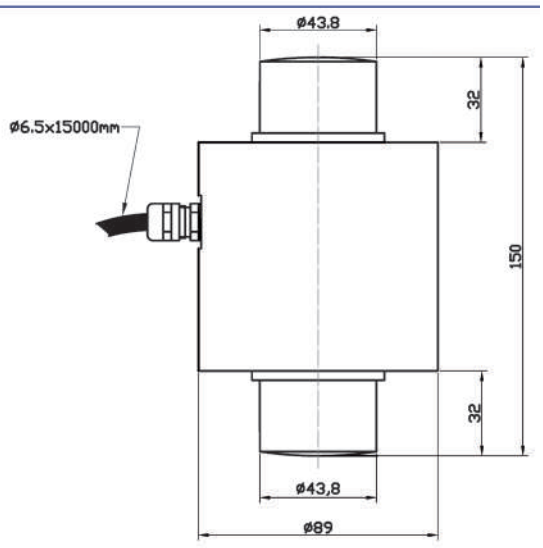
Totalmente soldada.
Estanqueidad IP-68 (EN 60529)
Fully welded. Protected against humidity IP-68 (EN 60529)
Totalement soudée. Etanchéité IP-68 (EN 60529)

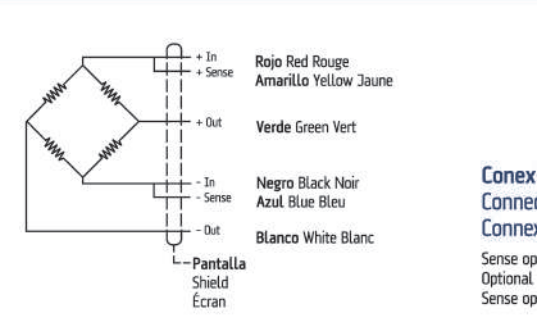
Incorpora descargadores de gas para protección descargas atmosféricas
With gas dischargeers to protect against atmospheric discharges
Incorpore des déchargeurs de gaz pour protection contre les décharges atmosphériques

Disponible en version ATEX (opcional)
(Ex II 1GD Ex ia IIC T6 IP67 T85°C)
Available in ATEX version (optional)
Disponible version ATEX (optionnel)

Características técnicas
Technical Data
Caractéristiques Techniques

Clase de precisión Accuracy class Classe de précision	C3-C4
Sensibilidad Rated output Sensibilité	2 ± 0.1% mV/V
Vmin Vmin Vmin	Emax/14000
Tensión de alimentación Excitation Voltage Tension d'alimentation	5÷15 V
Resistencia de entrada Input Resistance Résistance d'entrée	800 ± 3
Resistencia de salida Output resistance Résistance de sortie	700 ± 3
Margen de temperatura compensado Temperature limits OIML R60 Marge de température compensée	-10º C / +40º C
Resistencia de aislamiento Insulation resistance Résistance d'isolement	> 5000 M





Conex
Connei
Connex
Sense op
Optional
Sense op

SENSOCAR
Tel.: 34 93 780 44 99
Fax: 34 93 780 39 72
www.sensocar.com
comercial@sensocar.com

CS-A

Certificat LOM 07ATEX2006 | Certificate N° E-02.02.C06 | R60/2000-ES1-09.01

Made in Spain

Célula de carga a compresión
Compression load cell
Capteur à compression

Hasta 6000 divisiones OIML-R60
Up to 6000 divisions OIML-R60
Jusqu'à 6000 divisions OIML-R60

Totalmente en acero inoxidable
Fully stainless steel
Totalement acier inoxydable

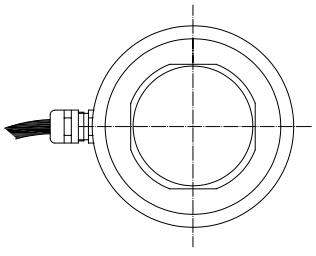
Totalmente soldada.
Estanqueidad IP-69K (EN 60529:2018)
Fully welded. Protected against humidity IP-69K (EN 60529:2018)
Totalement soudée. Etanchéité IP-69K (EN 60529:2018)

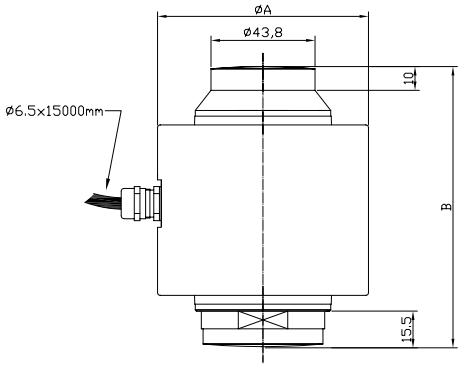
Incorpora descargadores de gas para protección descargas atmosféricas
With gas dischargeers to protect against atmospheric discharges
Incorpore des déchargeurs de gaz pour protection contre les décharges atmosphériques

Disponible cable metálico antiroedores
Available cable with metallic cover
Câble métallique anti rongeurs disponible

Características técnicas
Technical Data
Caractéristiques Techniques

Clase de precisión *Accuracy class* *Classe de précision*	C3-C4-C5-C6
Sensibilidad *Rated output* *Sensibilité*	2 ± 0.1% mV/V
Vmin *Vmin* *Vmin*	Emax/18000
Tensión de alimentación *Excitation Voltage* *Tension d'alimentation*	5÷15 V
Resistencia de entrada *Input Resistance* *Résistance d'entrée*	800 ± 5 Ω
Resistencia de salida *Output resistance* *Résistance de sortie*	700 ± 3 Ω
Margen de temperatura compensado *Temperature Compensation* *Compensation de température*	-10° C / +40° C
Límites de temperatura *Temperature limits* *Limites de température*	-40° C / +80° C
Resistencia de aislamiento *Insulation resistance* *Résistance d'isolement*	> 5000 M Ω

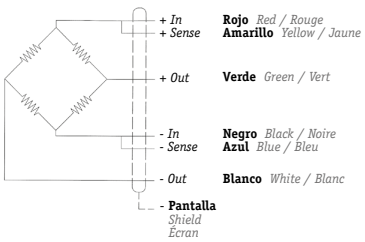




Capacidad (t) *Capacity - Capacité*	A	B
10 - 50	ø89	118.5
100	ø113.4	140

SENSOCAR

Conexionado
Connections
Connexions
***Sense* opcional**
Optional Sense
Sense optionnel



Rojo *Red / Rouge*
Amarillo *Yellow / Jaune*
Verde *Green / Vert*
Negro *Black / Noire*
Azul *Blue / Bleu*
Blanco *White / Blanc*

Indicator

The indicator which displays the basic weighing functions, can also serve as a control center for the truck scale to manage data in the related software on the computer, other weight displays, and printers.

There are many models of weight-indicating instruments available that can be used with vehicle scales. It is usually a good idea to use a weight indicator manufactured by the same company that will manufacture your vehicle scale. Doing this will ensure that there are no compatibility problems and provide you with a single point of responsibility. Our experts can show you a number of models with special features that will make the operation and use of the new scale quick and easy.

The 1610 model produced by Fard Iran is one of the most versatile indicators with the following features:

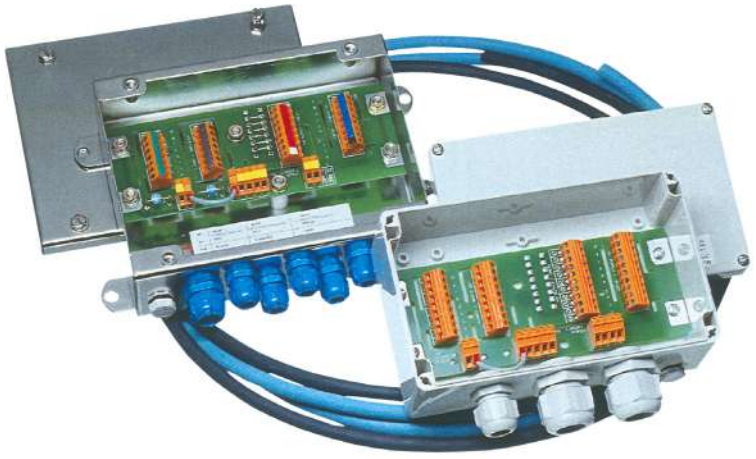
- Suitable for both industrial and commercial application
- Can store up to 3,000,000 records, expandable to infinite records just by replacing the memory card
- Can be connected to the computer to manage data in software
- The possibility of defining the product, the Truck-ID, and other related data
- The possibility of designing the bills based on customers' needs

1610

Junction Box

A Junction Box (J-Box) is a unit that controls and monitors multiple load cells and aligns the system for accurate and reliable weight readings. This box digitizes the signals from each load cell, then calibrates and combines them into a single value using special software algorithms. This single value is then sent to the indicator. As this procedure plays a vital role in the accurate performance of the scale, the J-Box essentially allows the truck scale to work correctly.

A variety of junction box options such as being waterproof is available based on customers' needs.



Intelligent Transportation Systems

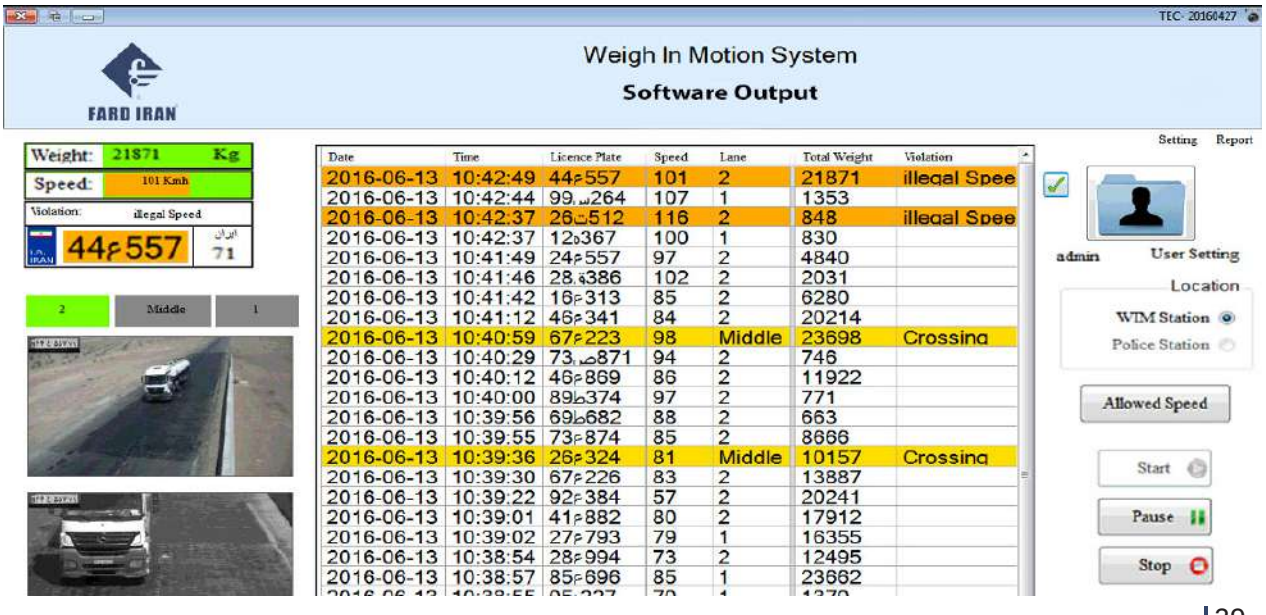

Ahead of
ITS
Time

High Speed Weigh-In-Motion for Direct Enforcement

Key Features:

- Extensive and live data analysis system for real-time vehicle weight measurement
  and direct law enforcement
- Two platforms per lane, achieving %97 GVW accuracy
- State-of-the-art, 23kHz, IP69 load cells, for possibility of low and high speeds detections
- Vehicle weighting speed range:
- 5 Km/h to 250 Km/h
- Operating temperature range:
- –30 °C to +80 °C
- Camera-based speed detection for added accuracy
- OCR (Optical Character Recognition) technology combined with LPR (License Plate Recognition) and USDOT number reader, for vehicle image capturing and classification
- High durability and minimum maintenance requirements
- Full compliance with ASTM E1318 and COST 323

System Accuracy	
Accuracy class acc. to COST 323	A(5)
Gross Vehicle Weight Error	±5 %
Group Axle Load Error	±7 %
Single Axle Load Error	±8 %
Confidence Level	92 %
Speed Error	±3 %
Operating conditions	
Axle load	0 ... 50 tons
Gross Vehicle Weight	Unlimited
Temperature	-30 ... +80 C
Speed	5 ... 250 km/h



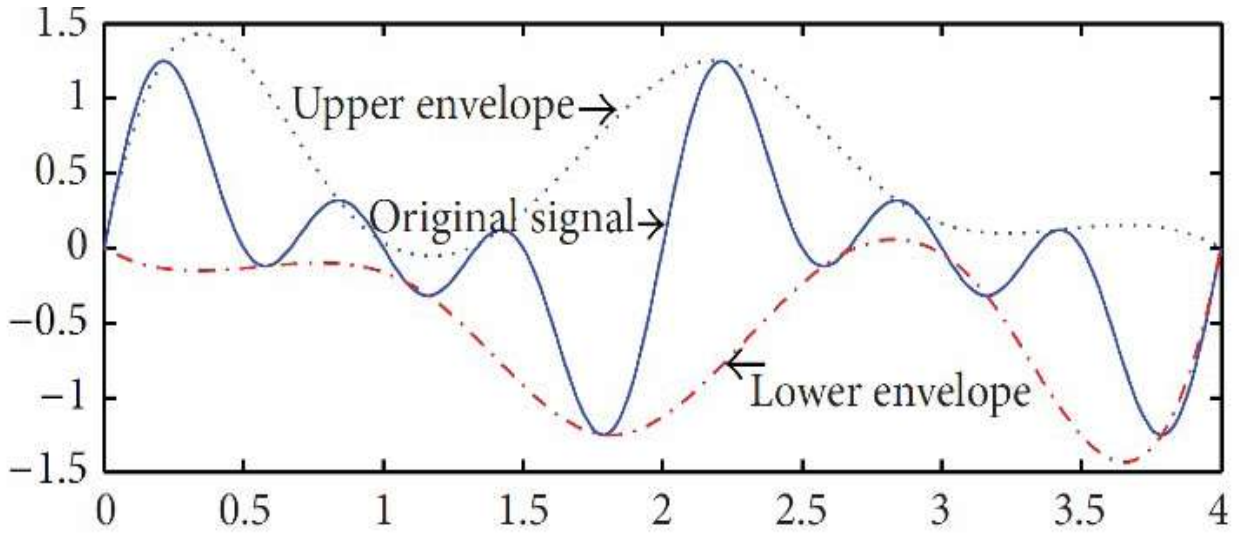
Date	Time	Licence Plate	Speed	Lane	Total Weight	Violation
2016-06-13	10:42:49	44ع557	101	2	21871	illegal Spee
2016-06-13	10:42:44	99ب264	107	1	1353	
2016-06-13	10:42:37	26ب512	116	2	848	illegal Spee
2016-06-13	10:42:37	12ب367	100	1	830	
2016-06-13	10:41:49	24ع557	97	2	4840	
2016-06-13	10:41:46	28ع386	102	2	2031	
2016-06-13	10:41:42	16ع313	85	2	6280	
2016-06-13	10:41:12	46ع341	84	2	20214	
2016-06-13	10:40:59	67ع223	98	Middle	23698	Crossing
2016-06-13	10:40:29	73ص871	94	2	746	
2016-06-13	10:40:12	46ع869	86	2	11922	
2016-06-13	10:40:00	89ب374	97	2	771	
2016-06-13	10:39:56	69ب682	88	2	663	
2016-06-13	10:39:55	73ع874	85	2	8666	
2016-06-13	10:39:36	26ع324	81	Middle	10157	Crossing
2016-06-13	10:39:30	67ع226	83	2	13887	
2016-06-13	10:39:22	92ع384	57	2	20241	
2016-06-13	10:39:01	41ع882	80	2	17912	
2016-06-13	10:39:02	27ع793	79	1	16355	
2016-06-13	10:38:54	28ع994	73	2	12495	
2016-06-13	10:38:57	85ع696	85	1	23662	

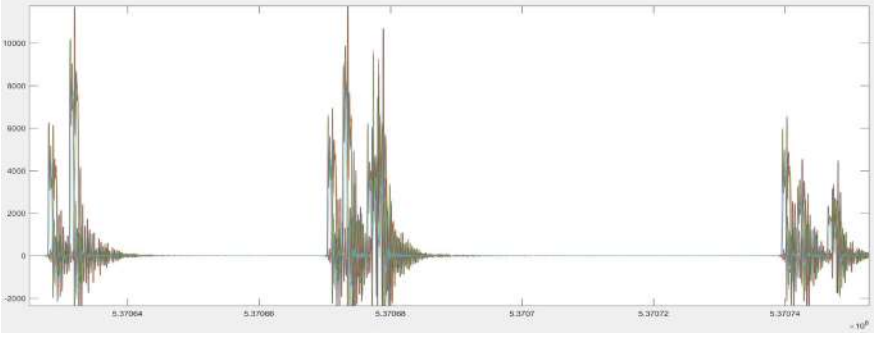

5,5m

Data Analysis & Weight Estimation Methods

- Exceedingly high sampling rate of 2.5 mega samples per second, enabling the detection of
  vehicles with the speeds of 200 Km/h and above.
- 6 Mbit/s data collection rate for each platform and 24 Mbit/sec for 4 platforms at once.
- Minimum dependency to International Roughness Index (IRI) and road geometry

Minimum system impression due to vehicle suspension systems (solid leaf spring or air type)

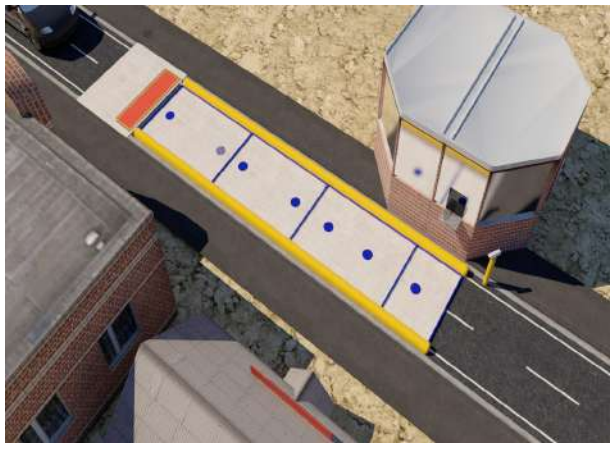




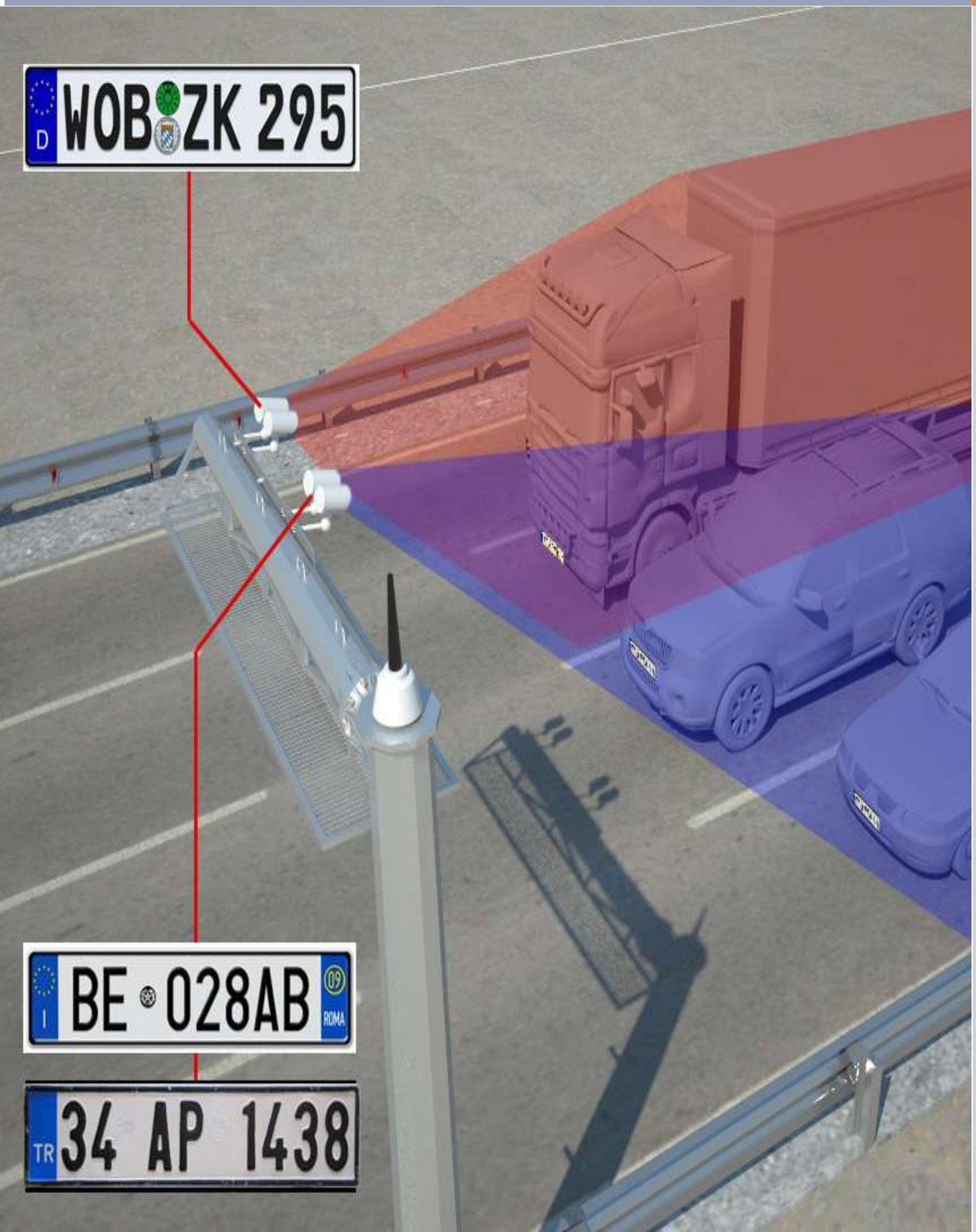
Low Speed Weigh-In-Motion

Main Features:

- Unmatched design to achieve excellent accuracy
- Ability to weigh the axle load of all road vehicles
- Ability to weigh the axle group load of all road vehicles
- Employing the best load cells
- Prefabricated foundation with high strength and accuracy
- Available as both pit-mounted and above ground
- Ability to weigh vehicles with a speed of up to 10km/h
- Equipped with ANPR (Automatic number-plate recognition)
- Ability to be connected to online WIM software
- Ability to define time periods for data reporting
- %0.05 accuracy in group loads weighing



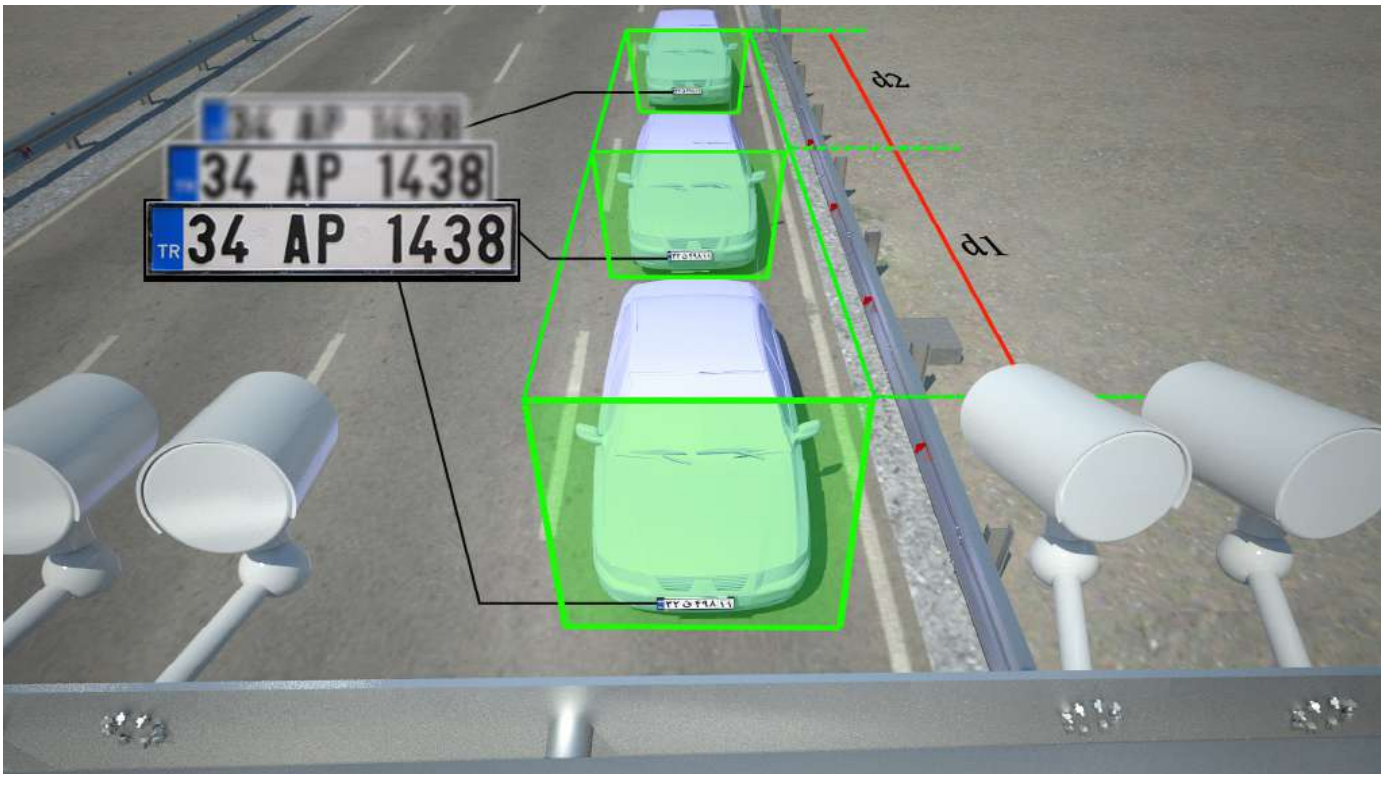
Automatic Number Plate Recognition (ANPR) System



IntelliCam ® is a highly accurate ANPR system designed for all weather license
plate detection, speed detection, and direct enforcement.

Technical Features:

- Easy installation and maintenance
- Highly accurate license plate localization and detection
- 97% accuracy of the license plate recognition system
- 98% accuracy of the speed detection system
- Equipped with overview and ANPR cameras
- High dynamic range and wide viewing angle cameras
- Capability of training and reading international license plates
- Invisible IR illumination for night and dark environments
- Adaptive camera calibration system
- Non-stop, 24 hours/7 days operation
- IP6 protection

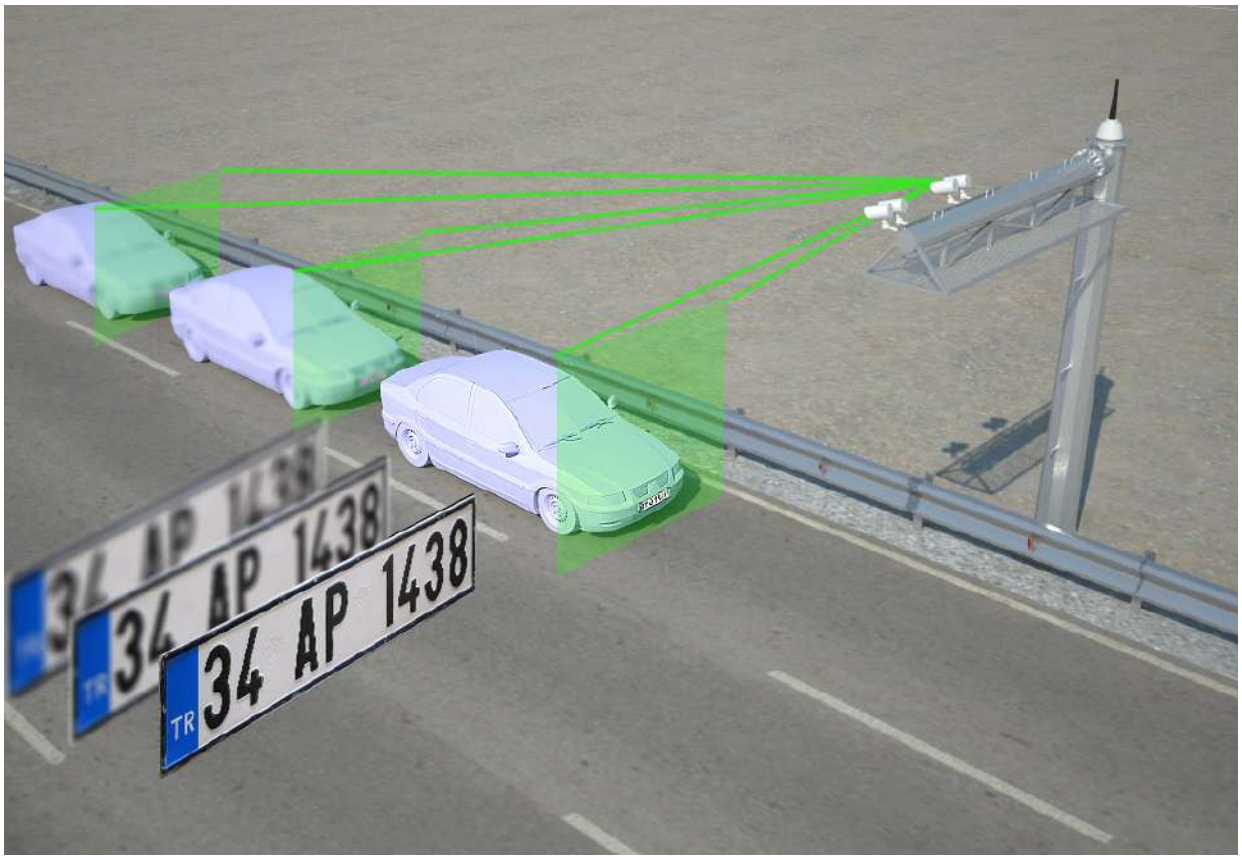


Applications:

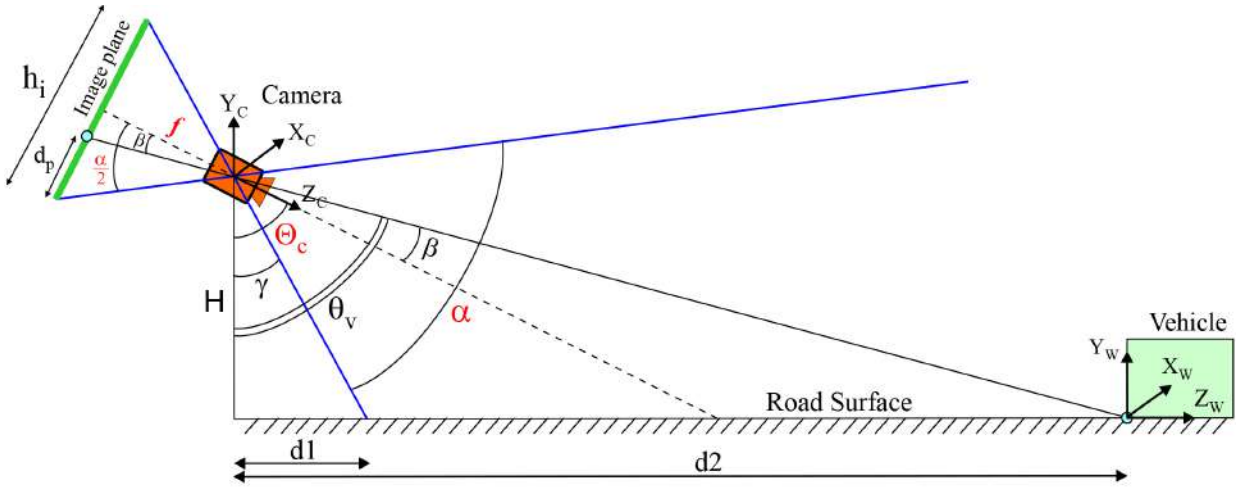
- Highways
- Urban and rural roads
- Petrol stations
- Toll stations
- Car park
- Military and Governmental sites

Reports:

- Individual vehicle license plate number
- Individual vehicle's point-to-point and average speed
- Cropped image from the license plate number
- Digitized and saved plate information in various standard databases (e.g. SQL)
- Graph-based report for traffic flow, speed, and vehicles' count
- Average traveling speed for individual vehicles over the equipped road and highways


34 AP 1438
TR


D
EK-94P8
07
15
NL
AL-EX-71
AL
AA 053 AV
PL
RB I A168
SRB
ČA 030-KX
琼A·Q8898

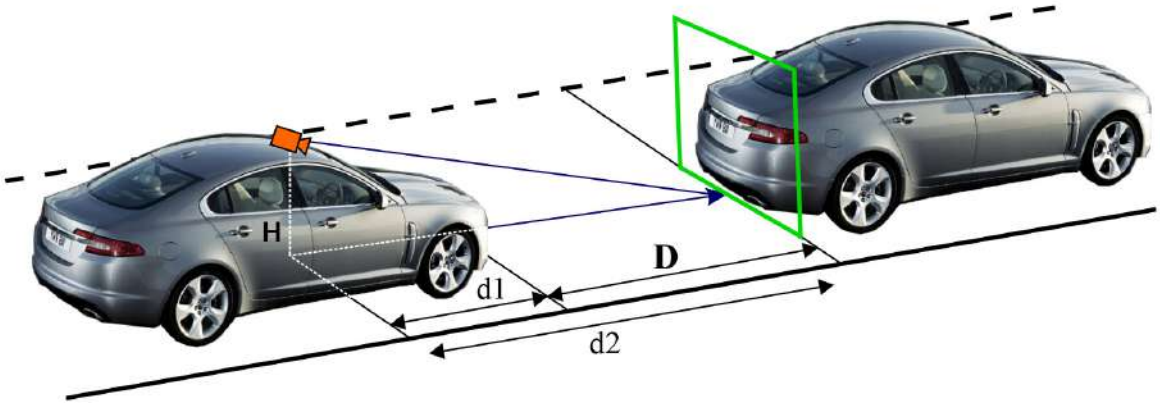

h_i
Image plane
f
d_p
α/2
β
Y_C
Camera
X_C
Z_C
Θ_c
γ
H
θ_v
α
β
Vehicle
Y_W
X_W
Z_W
Road Surface
d1
d2

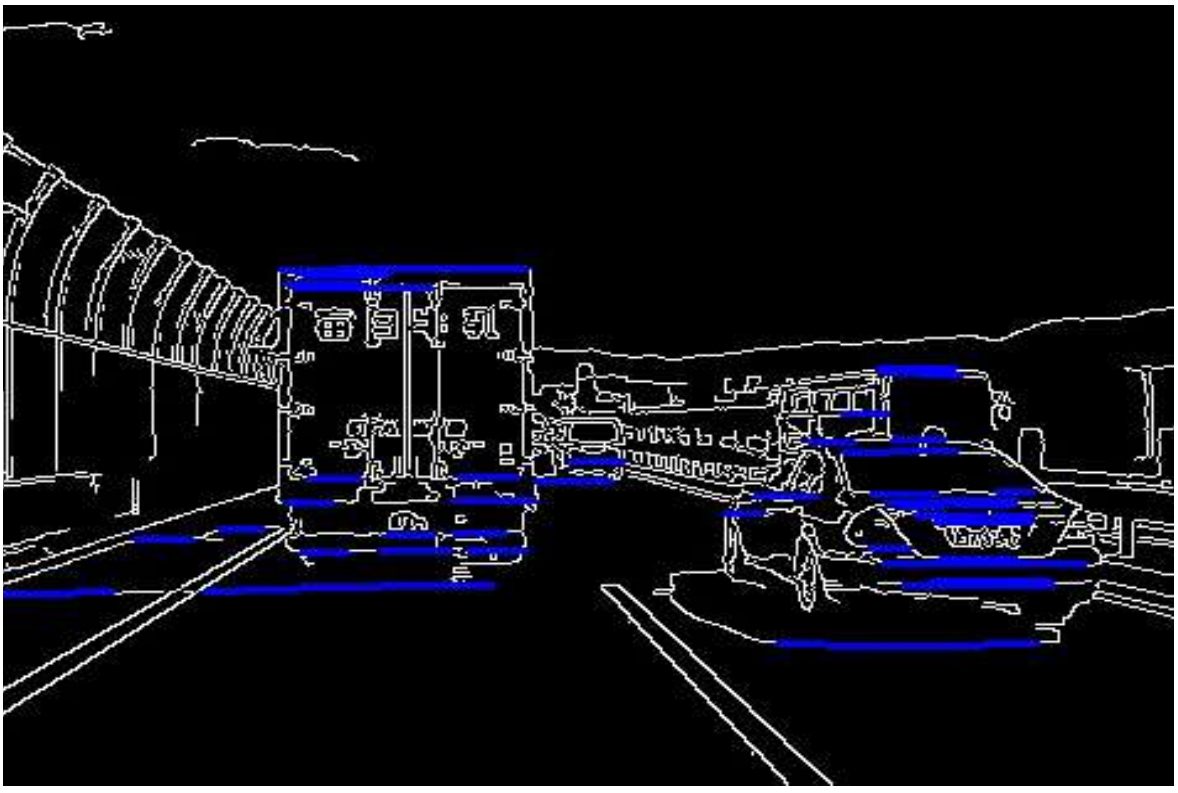
Police Assistance Speed Detection System

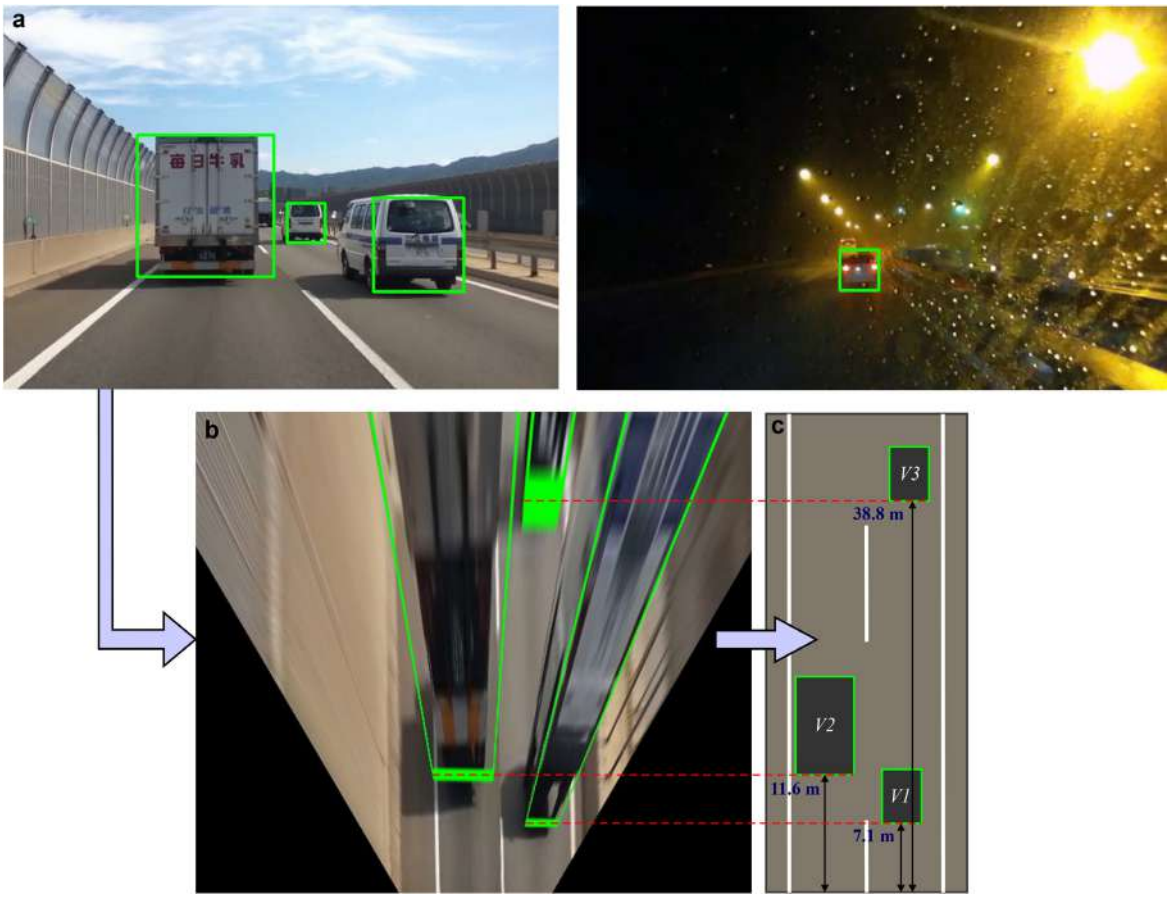
PoliCam ® is an autonomous system that measures and detects the relative and absolute speed of the vehicles driving in front of the police ego-vehicle.

Technical Features:

- Easy dash-mount and portable system, suitable for all-type police cars
- Speed detection range: 10- 250km/h
- Speed detection accuracy: 98%
- Equipped with GPS localization and tracking system
- Online ticketing option
- Online record and report of vehicles' image, speed, and location
- Advanced computer-vision based monocular system
- Low-power battery drive system
- Adaptive camera calibration system
- 24-hour day and night operation
- 5 Years warranty





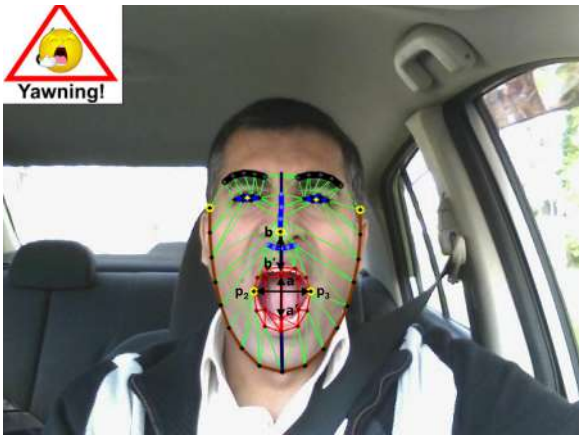

a
b
c
V3
38.8 m
V2
11.6 m
V1
7.1 m

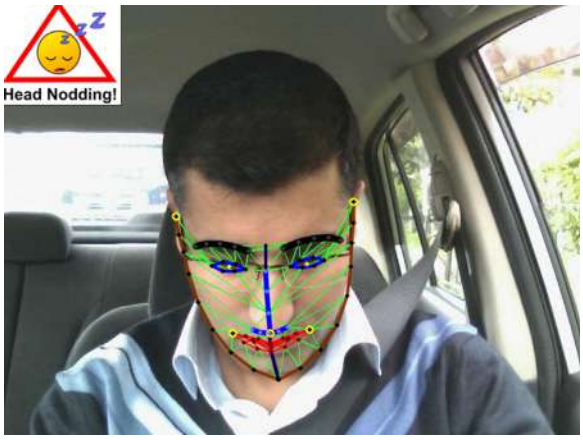
Autonomous Advanced Driver Assistance System

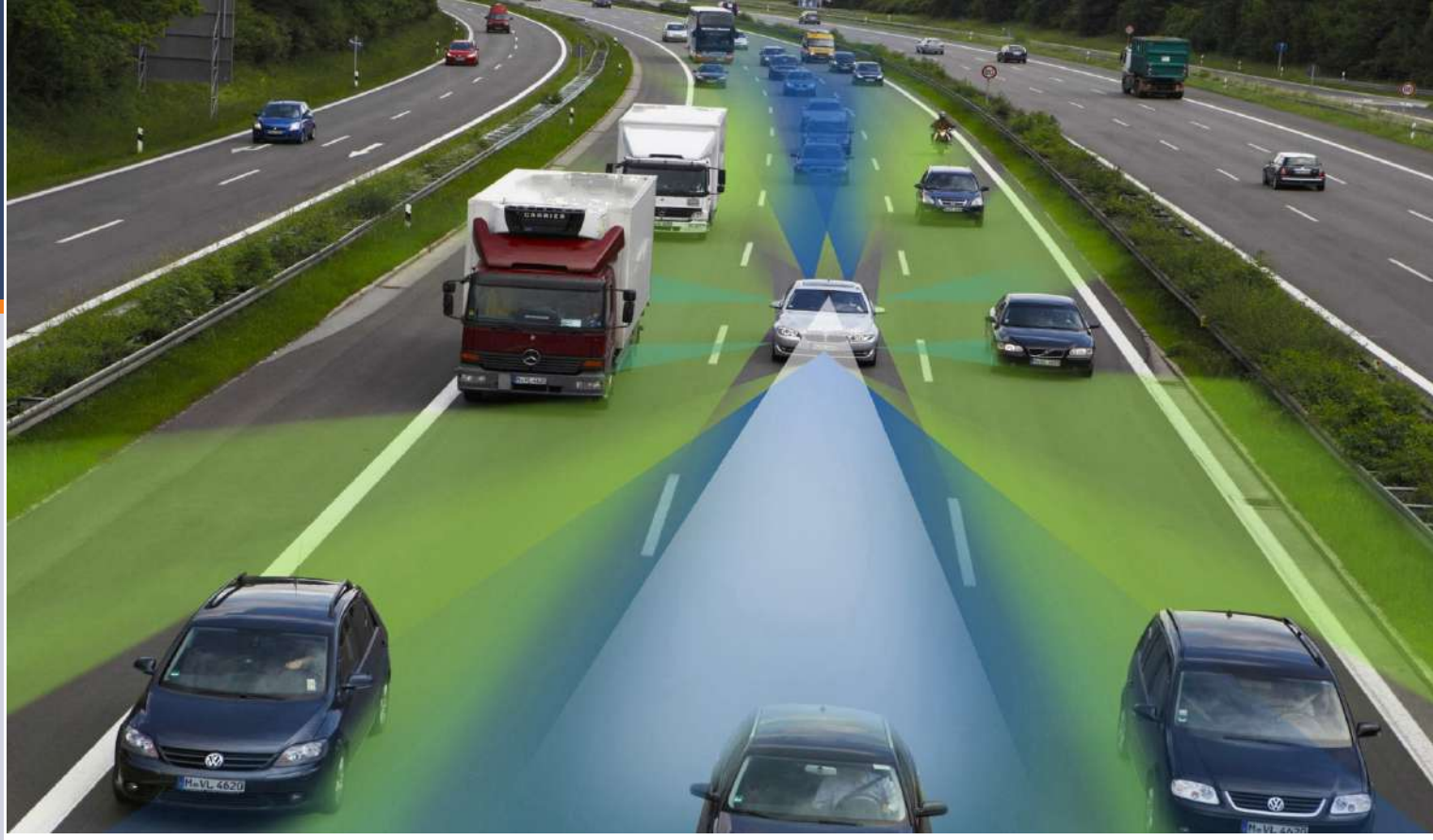
DrowsyCam ® is part of a complex and advanced driver assistance system that detects driver's drowsiness and distraction using a miniaturized face monitoring camera and an embedded hardware to warn drowsy drivers and to prevent fatal imminent crashes.

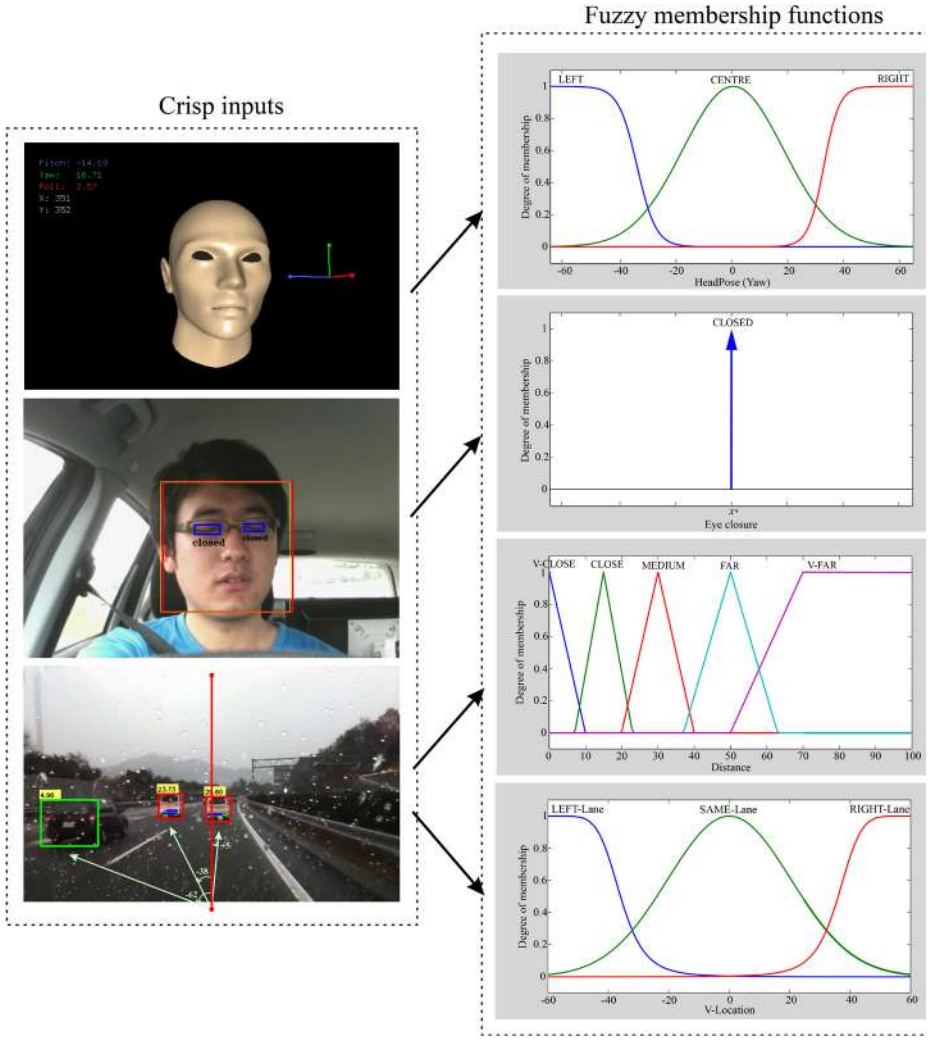
Key Features:

- Highly accurate blink-rate detection
- Intelligent closed-eye detection system
- Haptic and audio warning system
- Automatic day and night mode operation
- Drowsiness detection
- Head nodding detection
- Distraction detection
- Driver's head pose detection
- Eye-gaze analysis system
- Safe IR illumination for night mode monitoring
- Easy dash-mount and portable system, suitable for all types of vehicles
- Equipped with GPS localization and tracking system
- Online driver's status report
- Low-power battery operation system



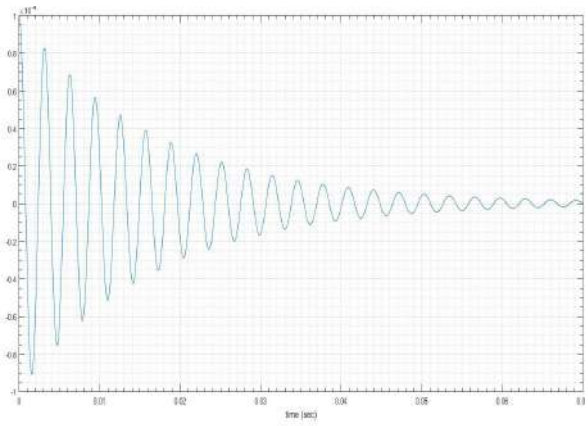


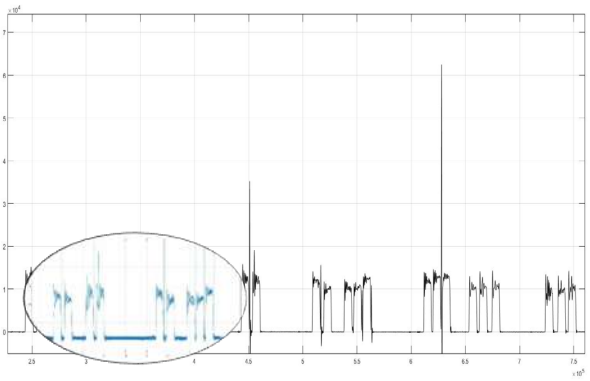



Fuzzy membership functions
Crisp inputs
closed
closed
LEFT
CENTRE
RIGHT
HeadPose (Yaw)
CLOSED
Eye closure
V-CLOSE
CLOSE
MEDIUM
FAR
V-FAR
Distance
LEFT-Lane
SAME-Lane
RIGHT-Lane
V-Location
Degree of membership

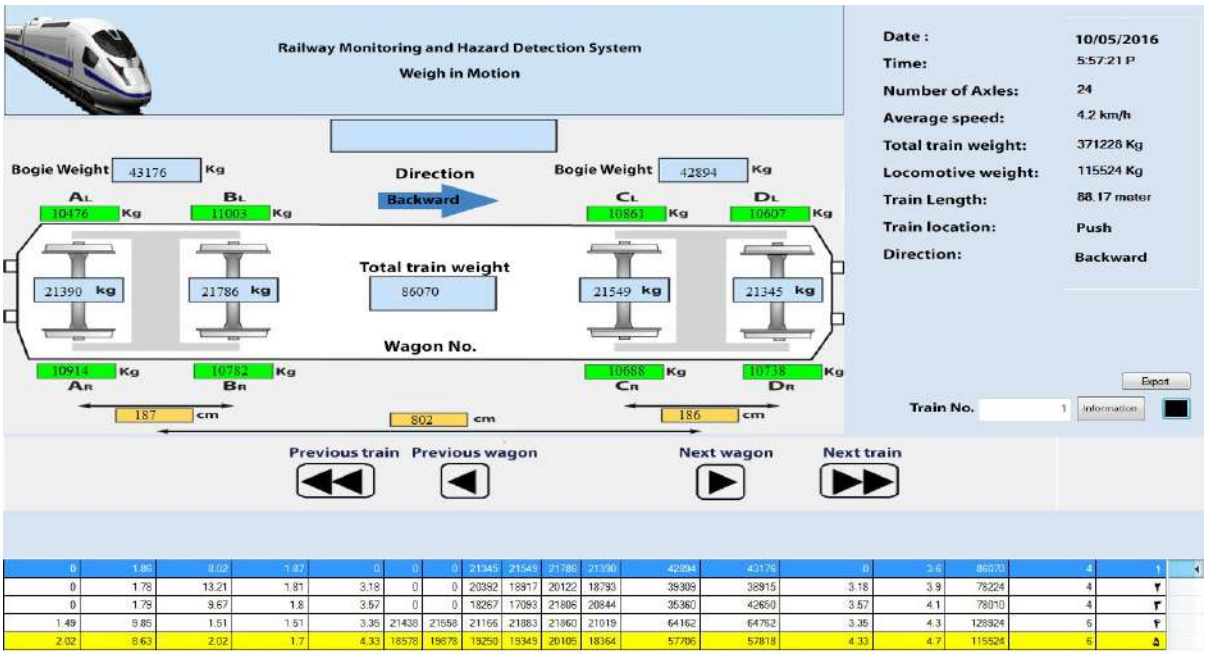
High Speed Track Weighing

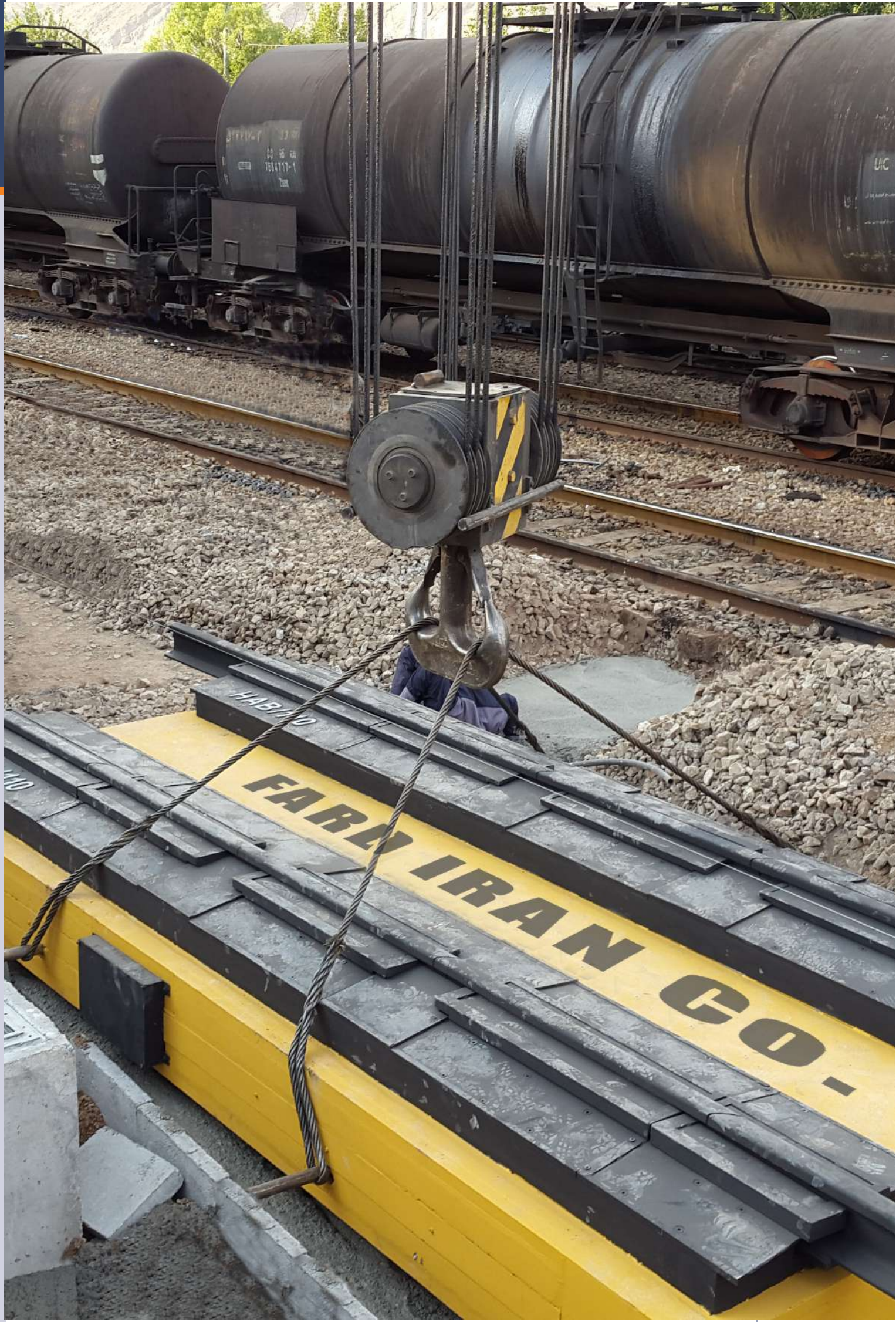
- Automatic load cell-based track Weighing-In-Motion
- Legal for Trade
- Speed Detection Range: 5Km/h to 80Km/h, with 99.5% accuracy
- Applicable for the majority of wagon types
- Minimum Installation downtime
- Track stabilization option via ballast bonding
- No transit speed limit
- Flat wheel detection system
- Hot wheel detection system
- Wheel weighing system
- Axle weighing system
- Unbalance axle detection system
- Bogie weighing system
- Wagon weighing system





System Specifications	
Capacity	50t per axle
Accuracy	±0.5% wagon ±0.25% total train
Speed	5 ... 80 km/h
Operating conditions	
Axle load	0 ... 50 tons
Gross Wagon Weight	Unlimited
Operating temperature	-30 ... +80 C
Speed	5 ... 250 km/h




FARAIRAN CO.

Awards and Certificates

Top Manufacturer Award

The Arch of Europe Award

International Star for Quality Commitment

Top Iranian Company

OIML Award

European Conformity

Top Exporter

EBC'L Award

Quality Management System

Customer Satisfaction Management System

Environment Management System

Integrated Management System

Other Achievements:

- Top three manufacturer of pre-fabricated weighbridge platforms in the world, constructed as per international production standards
- 2011 recipient of OIML Appreciation Award for Excellent Achievements in legal metrology in developing countries
- Peer-reviewed publication in OIML's October 2016 Bulletin
- Official partner and operator of Middle East's largest seaport's weighing stations for the past two decades
- Owner and operator of the largest weighbridge calibration fleet in the region
- 500-Strong committed team of scientists, engineers, and experts


TOWZIN GROUP
FARD
IRAN
گروه صنعتی توزین(فرد ایران)

TEC GROUP

FARD IRAN

Est. 1958

FRD-140205-18

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Tel: +98 (21) 88 88 66 66