



Infinite Vision

OUR COMPANY PROFILE

2022

WHO

Dorsa (Dideh Rayan Sanati Isfahan) is a company with the aim of monitoring, troubleshooting and developing processes in broad range of industries using image processing and machine vision solutions.

Dorsa founders, were a team of professors, graduated and students at Isfahan University of technology that cooperated in a R&D projects in steel industry.

After gaining a valuable experiences and carrying out lots of projects, they decided to establish Dorsa as a knowledge based company at Isfahan Science and technology town in 2016.



WHEN

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Born of Dorsa Co
First pellet grading system have been installed at Mobarakeh Steel Company

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First outdoor camera housing and bracket.
Smart pellet grading system have installed at Khuzestan Steel Company

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Design, produce and installing thickness measurement based on X-ray systems.

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Design, produce and installing Slab inspection systems based in special machine vision systems

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NOW

Thanks to access to latest cutting edge technologies, we are able to build vision solutions featuring full range of complexity, starting from evaluation and feasibility tests to project and integration.

Our R&D engineering services offer is aimed to practically every and each industry and science branch that may expose a need to quality control, inspection, estimation or measurement based on image acquisition equipment .We are present in industry branches including steel, mining and exploitation, packaging, product inspection and others.



Field of activity

X-ray inspection & measurement Systems

Image processing and AI systems

Industrial Camera and Accessories
producing and procurements

Quality inspection and grading
systems

Special electrical transformer
equipment design

Dorsa smart grading systems

DSGS (Dorsa smart grading system) is an image processing based system that measures pellets size and send commands to process control system to keep size of green pellets in optimal range.

DSGS has been installed in numerous pellet plants in Iran. We provide the package with well-designed software to optimize the pelletizing process by enabling the DCS to control the disc/drum speed.

Our DSGS solution will improve process performance, production capacity, and product quality which means that you can reduce energy consumption, environmental impact and operation and maintenance costs at your plant.



DSGS Benefits:

- Improve plant productivity and product quality up to 5%
- reduce fuel and power consumption up to 10%
- Improve green pellet size distribution up to 4%
- Up to 40% pellet size deviation
- reducing return fines in the green pelletizing loop and improve plant efficiency up to 5%

DSGS properties:

- real-time information on pellet size distribution
- automatic disc/drum speed control to achieve optimize pellet dimension
- drum/ disk soft speed control
- data archiving and accessible database
- equipped with alarm systems
- data can be Locally displayed (for onsite operator), Transmitted and stored

Typical specifications:

- Accuracy: 0.1 mm
- Respond time: 200ms
- Installation time: 50 days
- Interface: Ethernet/mA/V
- Processing unit spec : IPC
- Camera spec : POE Industrial grade

Dorsa inspection system

The defects on surface and geometrical tolerances are one of the major challenges in industries. Surface qualities along with other properties are the most important quality parameters, particularly for steel, paper, glass and other products. Therefore it is vital for the quality of the final product that the product surface be inspected throughout the complete process.

Dorsa inspection system (SABA) is the combination of powerful software and hardware with most advanced inspection technology to provide the best modular system for detecting, monitoring and reporting surface defects in products ranging from paper and plastics to steel and aluminum.

Using best in class camera technology with high-intensity lighting and industry-leading engineering in SABA system make it the best-possible precise real-time detection and classification solution.



SABA Benefits:

- Surface information from the complete process
- Overall plant quality management
- Online surface detection enables direct optimization of process
- Minimizing manual inspections that caused human errors
- Minimizing grinding and scarfing on process
- maximize process efficiency

SABA properties:

- High resolution line scan camera
- Powerful image data pre-processing
- In-house, industrial hardware and software for long availability
- Powerful classifications
- Comprehensive statistical functions with graphic output
- Data are available in standard formats
- Unrestricted network capability
- Remote operation via modern client software
- 100% remote service via VPN, ISDN or modem
- Versatile defect marking
- Online statics

Typical specifications:

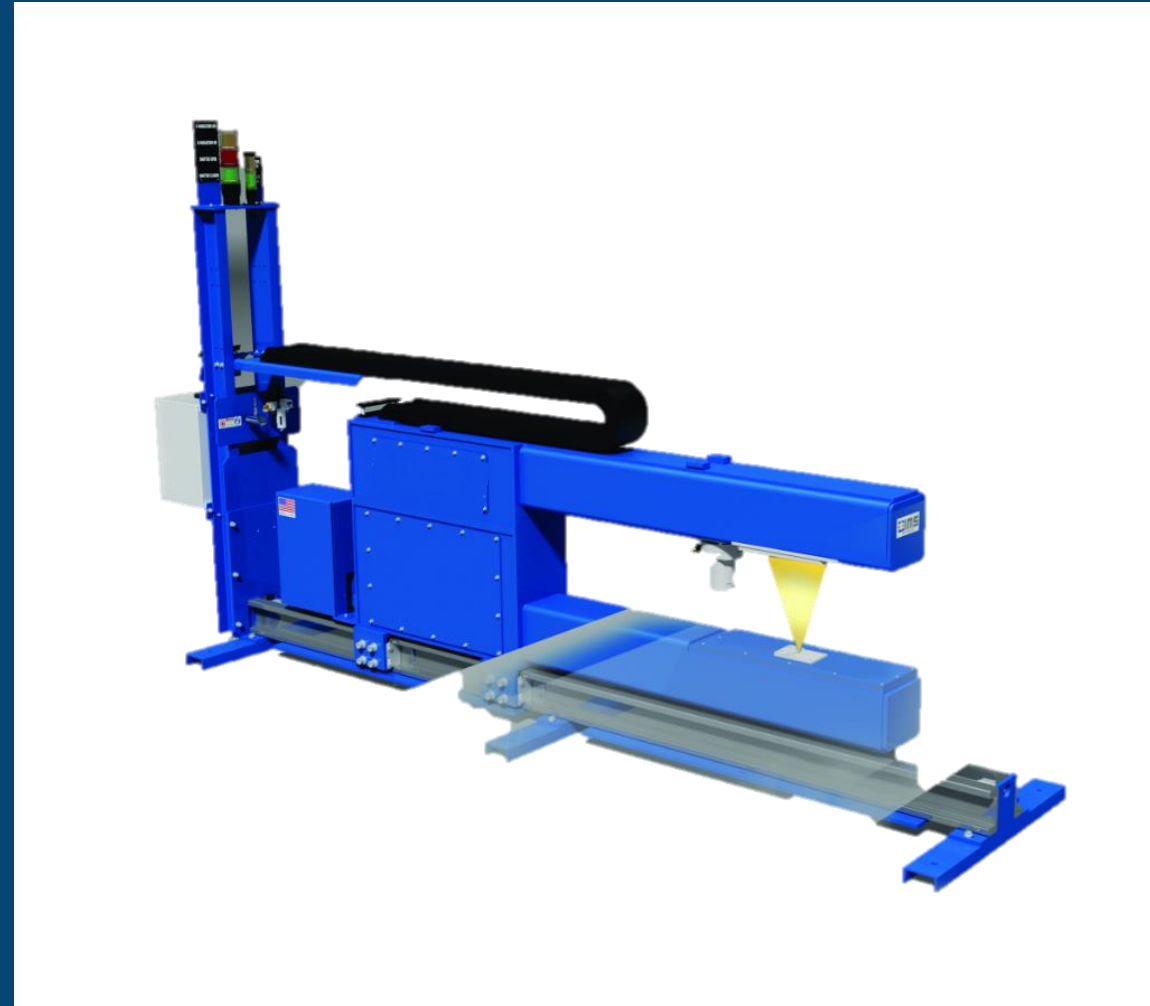
- Target temperature range: 0-1400
- Interface: Ethernet
- Total system weight: 1350 Kg
- Camera resolution: 2.3 MP-8 MP
- Camera type: POE industrial grade

Dorsa x-ray thickness gauge (Dx-ray)

Dorsa x-ray thickness gauge (Dx-ray) is designed to directly measure the thickness of flat products precisely along the production line online and without touching the material.

By using innovative technological solutions implemented in our technical department, we can guarantee first class performances expected by today's industries and cover a wide range of industrial applications.

Dx-ray is based on the detection of an X-ray beam that passes through the strip being measured. The amount of an x-ray beam that absorbed by slab determines the thickness. The measured values are sent to thickness control system to attain a specific and constant thickness along the length of the material.



Dx –ray Specification:

Material data:

- Measuring thickness range: 0.1 mm – 60 mm
- speed: 1200 m/s
- width: 1.8 m

Measurement system data:

- gauge type: c-frame
- radiation source: X-ray lamp

Measuring dynamics:

- Analogue time constant: 2ms
- Total time constant: 5ms
- Cycle time data output: 2ms

Measuring accuracy (2 sigma values)

- Linearity: 0.05%
- Long term drift (10 hrs): 0.1%
- Reproducibility: 0.1%
- Statistical noise (10 ms): 0.1%

Dx-ray properties :

- X-ray source to measure more accurately
- Reliable and versatile
- Easy installation with standard interfaces
- High source stability
- customizable design and software
- Fast response time
- Low operational costs
- Fast return on investment
- High resolution profile data :

Dorsa Camera Housing:

Dorsa has advanced and multifunctional Housing with special properties and are designed to be compact with light weight, which facilitates their installation and maintenance.

Our camera housing guarantee perfect and constant functionality of the cameras in more extreme and corrosive environmental conditions, such as marine, industrial environments and motorways.

These housings offer reliability and strength thanks to the maximum precision used in the manufacturing processes and the quality of the stainless steel AISI 316L, completely resistant to rust and corrosion.

These housing have exceptional resistance to corrosion, with wide temperature range and degree of protection IP66/IP67/IP68.



specification		DRH-6	DRH-5	DRH-4
Body material		stainless steel	stainless steel	stainless steel
weight	Single chamber	8.7 kg	7.5 kg	5.4 kg
	Doubled chamber	6.3 kg	5.4 kg	3.7 kg
Outer dimension		165.2 mm * 320 mm	139.8mm * 300mm	114.3 mm * 280 mm
Inner dimension	Single chamber	137.9 mm * 310mm	111.25mm * 290mm	86.05 mm * 270mm
	Doubled chamber	164.9 mm * 310mm	137.9 mm * 290mm	111.25mm * 270mm
Cable gland size		PG11 –PG21	PG11 –PG21	PG11 –PG21
Temperature range		-20 c to 250 c	-20 c to 250 c	-20 c to 250 c
Humidity range		0 – 100 %	0 – 100 %	0 – 100%
IP		IP66	IP66	IP66
Glass material		Tempered glass	Tempered glass	Tempered glass
Projector installation		yes	yes	yes
Cooling system		Air cooled/ water cooled	Air cooled/ water cooled	Air cooled/ water cooled
Accessories		Brackets	Brackets	Brackets

properties:

- Corrosion resistance
- Wide temperature range
- Wide industry applications
- Easy installation
- Low Maintenance

References

Dorsa smart pellet grading systems

- Mobarakeh Steel Company
- Khuzestan Steel Company
- Chadormalou pelletizing plant
- Pasargad Steel Company
- Sangan Pelletizing plant

Dorsa Inspection systems:

- Oxin steel company
- Mobarakeh Steel Company

Dorsa x-ray thickness

- Mobarakeh Steel Company
- Foulad Afshan Steel Company

Dorsa Camera Housing

- Mobarakeh Steel Company
- Jahan Ara steel company
- Chadormalou pelletizing plant
- Khuzestan Steel Company
- Pasargad Steel Company

