
acromtech
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SMART TRANSPORTATION TECHNOLOGIES
WEIGHING TECHNOLOGIES
LIGHTING TECHNOLOGIES
STEEL CONSTRUCTION & POLES
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SMART TRANSPORTATION TECHNOLOGIES | WEIGHING TECHNOLOGIES | LIGHTING | STEEL CONSTRUCTION – POLE

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The Leading Integrator Company

"We are proceeding to lead
New Technologies
with our expert staff."

CONTENTS

ABOUT US

With its experience and extensive knowledge over 20 years, our company offers the most reliable technology and engineering services. Owing to its investments on R&D and engineering studies and with its over 100 employees today, our company which is growing each day with brave steps is the key power of Turkish industry.

Thanks to successful projects carried out in Turkey and in various foreign countries since its foundation, brands belonging to Acrom Group have become widely spread. With its young and dynamic company structure which is open to development and innovation,Acrom Group always aims to achieve complete customer satisfaction by offering the product and service quality over customer expectations in a 10200 m2 closed area of Konya fourth organized industrial region. Also; our company has an area in Ankara METU Technopolis region where it carries out R&D studies, software simulation applications, wireless communication and image processing technologies.

With its technical departments and teams, our company fulfills the customers project, product, service, maintenance, assembly and repair needs on time and by adhering to quality principles. Acrom Group with its effective experience and knowledge in the sector, sees the needs and satisfaction of its customers as its most important capital and carries out its works meticulously in this direction.

In the field of weighing technologies Acrom Group produces truck weighbridges, wagon scales, industrial scales, indicators, load cells, weigh in motion with pre-notification, unmanned weighing systems and weighing automations with the brand name of Acrom.

In the field of transportation technologies, our group produces 5 mm led and power led signal lights, synchronous flashers, intersection control devices, led signaling poles, uninterrupted power supplies for signalization, audible pedestrian warning devices and buttons, smart junction systems with cameras and loop detectors, traffic engineering services, hybrid smart traffic systems, variable message and traffic signs, portable variable message signs, radar speed warning systems, meteorology systems, smart transportation management platforms, simulation programs and automatic level crossing systems.

Moreover, in the field of lighting the Acrom Group realizes the production of solar and electric lighting fixtures. In addition,the steel construction is also manufacturing by Acrom Group such as flag poles, lighting poles, camera poles, signaling poles and various types of constructions.

Acrom Group has approval documents including TS EN 12368, TS EN 50556, EN 12966, TS EN 45501, TS 13170, TS 12962, TS 13243, TS 12498, TS 12540, ISO 9001, ISO 14001, ISO 18001 and AT Type which are required for its productions without sacrificing quality and continues to grow with the vision of developing qualified local products in line with the target of full customer satisfaction by making important contributions to the country economy.

OUR QUALITY POLICY

The total quality awareness is established by ensuring that everyone extending from our suppliers to customers adopts the belief that quality is a process that must be continuously developed and progressed rather than a goal to be achieved.

To realize the production of qualified products and services that meets changing customer expectations more perfectly, faster and more economically than their requests by working as an integrated facility with our customers,

To reach maximum quality in the first time with high efficiency and minimum cost by minimizing errors with planned and systematic activities,

To expand our targets continuously on “quality” to create our own ACROM quality standard, always to be a pioneer, sought-after and innovative organization in the industry.

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SMART TRANSPORTATION TECHNOLOGIES

PRODUCTS | SOLUTIONS

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SIRIUS+ SERIES POWER LED SIGNAL LIGHTS

SIRIUS+ Series Power LED Signal Head Lights are the first local signal lights that have phantom class 5 certificate in Turkey that shine like star with high luminance performance values.

With its special interior design, **SIRIUS+** Series Power LED Signal Heads are designed to provide high performance, aesthetic appearance and high durability based on LEDs, coolers, polycarbonate molds and electronic circuits used in signal heads with power leds.

SIRIUS+ Series Power Led traffic head lights have a fully modular structure. An ergonomic setup is formed for easy mounting and installation. In case of a breakdown, only the related module can be changed. Every unit is de signed in plug&play structure.

SIRIUS+ SERIES POWER LED SIGNAL LIGHTS

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Diameter	Ø300 mm	Ø200 mm	Ø200 mm
Product	Power LED Traffic Signal Head	Power LED Traffic Signal Head	Power LED Traffic Signal Head
Operating Voltage	220 Volt / 42 Volt	220 Volt / 42 Volt	220 Volt / 42 Volt
Operating Frequency	50 Hz (±4)	50 Hz (±4)	50 Hz (±4)
Operating Temperature	-40°C , +70°C	-40°C , +70°C	-40°C , +70°C
Relative Humidity	%95	%95	%95
EMC	EN 50293	EN 50293	EN 50293
Body Structure	%100 Polycarbonate	%100 Polycarbonate	%100 Polycarbonate
Body Color	Black, Yellow, Grey	Black, Yellow, Grey	Black, Yellow, Grey
Power Factor	> 0,9	> 0,9	> 0,9
Total Harmonic Distortion	< %20	< %20	< %20
Power Consumption	< 8W / Module	< 8W / Module	< 8W / Module
Phantom Class	5	5	5
Light Intensity Distribution	Type N veya M	Type W	Type W
Symbol Class	S1	S1	S1
Durability	IR3	IR3	IR3
Protection Class	IP65	IP65	IP65
Performance Level	B3/2 / A3/2	B2/2 / A3/1	B2/2 / A3/1

SIRIUS+ With its renewed cooling technology Series Power Led traffic head lights had been more durable to harder conditions ever after. The module which is cooled towards outside is designed and improved by ACROM facilities and has got “Beneficial Model” certificate approved by Turkish Standard Institute (TSE). All type of signal groups can be obtained by means of several mask types **SIRIUS+** Series Power Led traffic head lights.

Tram

Bicycle

Arrow

Pedestrian

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ACROMTECH SERIES LED SIGNAL LIGHTS

Acrom Group is one of the largest manufacturers in Turkey which has produced about 192.000 pieces of 5mm LEDs traffic signal heads until today. Our company becomes prominent thanks to its perfect designs and high-quality products and keeps manufacturing at full steam.ACROM Series LED traffic signal head lights are mainly designed based on maximum brightness principal. Meissa has also completely a modular structure for easiness of maintenance.

Owing to special front glass design on ACROM Series Led Signal Heads, the best vision at day and night are provided by giving fully homogeneity to emitted lights from signal heads. Also, long-lasting guarantee is provided thanks to high qualified leds mounted on all signal groups. In case of any LED failure, it will not affect any other LED provided that the electronic circuit design is performed according to achieve this.

Arrow

Tram

Pedestrian

Double

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ACROMTECH SERIES LED SIGNAL LIGHTS

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Diameter	Ø300 mm	Ø200 mm	Ø200 mm
Product	5mm LED Traffic Signal Head	5mm LED Traffic Signal Head	5mm LED Traffic Signal Head
Operating Voltage	220 VAC (-%20 , +%15)	220 VAC (-%20 , +%15)	220 VAC (-%20 , +%15)
Operating Frequency	50 Hz (±4)	50 Hz (±4)	50 Hz (±4)
Operating Temperature	-40°C , +70°C	-40°C , +70°C	-40°C , +70°C
Relative Humidity	%95	%95	%95
EMC	EN 50293	EN 50293	EN 50293
Body Structure	%100 Polycarbonate	%100 Polycarbonate	%100 Polycarbonate
Body Color	Black, Yellow, Gray	Black, Yellow, Gray	Black, Yellow, Gray
Power Factor	> 0,9	> 0,9	> 0,9
Total Harmonic Distortion	< %20	< %20	< %20
Phantom Class	5	5	5
Light Intensity Distribution	Type N / M	Type W	Type W
Symbol Class	S1	S1	S1
Durability	IR3	IR3	IR3
Protection Class	IP65	IP65	IP65
Performance Level	B3/2 / A3/2	B2/2 / A3/1	B2/2 / A3/1

Up to year 2020

192.000 pieces

of **Acromtech** branded 5mm led signal lights are produced

Graphic Back Counter

Animated Pedestrian

Back Counter

Pedestrian Back Counter

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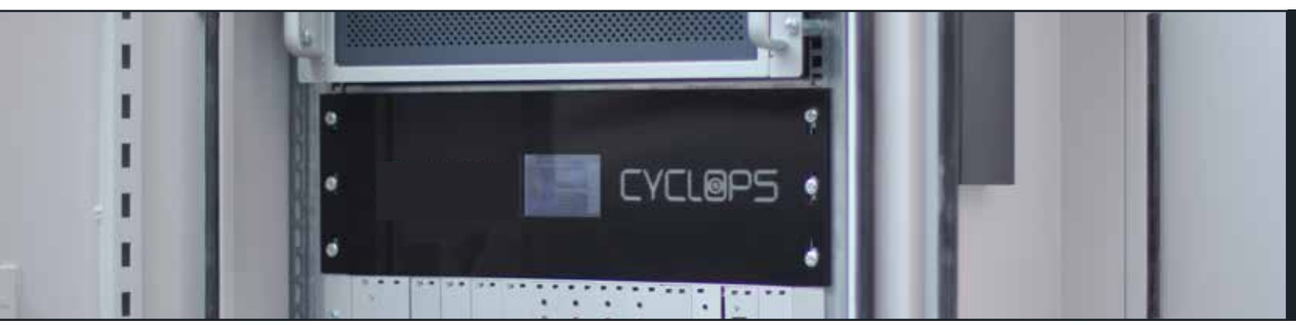
OMMATID SMART TRAFFIC CONTROLLER

OMMATID is a smart intersection control device which provides real-time full adaptive control. By providing real time communication with other intersections, OMMATID is capable of giving you the control of many intersections from one center.

Thanks to this, you can manage the traffic of intersections and arteries priorly and then traffic of all city in an adaptive way. OMMATID at where it's mounted decides in real-time to "which signal head lights will be at which color" without waiting the next phase or period owing to data obtained from Image Processing unit in seconds. Thus OMMATID decreases waiting time in intersections, provides fuel-save and decreases environmental pollution.



WHY OMMATID ?

Aesthetic design
Completely industrial hardware
Full Adaptive
Control and protection plans
Real-Time decision-making mechanism
Mathematical models and algorithms
Artificial intelligence
Highly capable image processing unit
Compatibility with all the traffic sensors and detectors
IP-55 protection class
Climatic cabinet
Management from the traffic control center

OMMATID SMART TRAFFIC CONTROLLER

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CPU
ARM Based Structure
Ethernet, USB
RS-232, RS-485
Real-Time Clock
48 Group Capacity
3U Rack Size Standard

Detector Card
24 Channel Detection Capacity
Adjustable Detection Settings
Real-Time Detect and Watch
6U Rack Size Standard

Driver Card
Malfunction Detection for Each Module
ARM Based Structure
Real-Time Intersection Simulation
6U Rack Size Standard

OMMATID Device Hardware

Image Processing Unit
Required traffic parameters are obtained at high accuracy ratios thanks to mathematical models and algorithms used in image processing unit.

Touchpanel
You can make any changes on the euqipment as you wish and you can view device states by the help of this panel.

Control Unit
This unit has CPU and driver cards inside it which provides electrical communication with other signalization equipments. Besides, it is the field where smart managements are performed.

UPS
Provides sending the information of "power cut" and continuity of data transfer without any disruption.

Input/Output Hardware
The unit where the cable connections with other devices are made.

Loop Detector
Traffic parameters are obtained with inductive detection.

Power Unit
Provides the regulation of electricity coming to device. Besides, inholds units such as fuse groups and electric meters.

YOU WILL FEEL THE DIFFERENCE WITH OMMATID

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MATADOR SERIES TRAFFIC CONTROLLERS

MATADOR Traffic Controller

Matador Traffic Controllers are designed to solve current traffic problems with its software and hardware. General specifications;

- CPU based software
- 24V, 40V, 42V, 110V, 220V alternative output voltages
- 4,8,12,16,20,24,28,32,36,40,44,48 group facilities
- RS232 and USB communication ports
- Fully adaptive to central management
- Normal function and malfunction modes
- Ergonomic software interface
- Optional working modes
- Compatible to green wave
- Comply with TSE EN 50556 standards

Device Structure

- Switched Power Supply
- CPU
- Output Hardware
- Detector
- Driver
- Auxiliary Communucation Modules
- Digital and Analog I/O
- Touchscreen

FULL COMPATIBILITY WITH TRAFFIC SYSTEMS

Matador Series Traffic Controller is fully compatible with rail systems, pedestrian buttons, loop detectors and traffic sensors. According to the requests coming from these sensors semi traffic triggered, full traffic triggered and priority transit systems can be conveniently achieved.

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MATADOR SERIES TRAFFIC CONTROLLERS

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MATADOR MINI Traffic Controller

Features

- Economical solution for max 8 group intersections
- Light and ergonomic
- IP 55 cabinet in dimensions 52x70x34 cm
- Provides EN 50556 standard

Device Structure

- Power Supply
- Main CPU
- Output Hardwares
- Detector
- Driver
- Keyboard ve LCD
- Compatible with central management

Technical Features

- 2 pieces 32 bit processor
- Expandable modular structure
- Compatible working with central computer systems and/or detector systems
- Connectable design for 24 piece loop and 6 piece pedestrian button
- Real-time clock
- Different scenarios for fault types
- Upload signal program through the RS232(on CPU) standard

MATADOR Pedestrian Traffic Controller

Features

- Economical solution for pedestrian button systems
- IP 65 cabinet in dimensions 30x40x20 mm
- Light and ergonomic
- Provides EN 50556 standard

Device Structure

- Power Supply
- Main CPU
- Output hardwares
- Detector
- Driver

Technical Features

- 2 pieces 32 bit processor
- Modular structure which can expand(when it is necessary) to 8 group
- Connectable design for 12 piece loop and 6 piece pedestrian button
- Different scenarios for fault types
- Real-time clock
- Upload signal program through the RS232(on CPU) standard

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SOLAR RF / GPS SYNCHRONOUS FLASHER

Solar RF/GPS Synchronous Flasher product is capable of operating at flowing mode, synchronous mode or normal flasher mode by means of superior software and hardware features it has. The product has got available models of multi-leds and power led.

Synchronous flashers are produced in two types optionally. These types are RF and GPS. These types use 2.4 GHz RF technology and real-time upload module. It gives best performance with long-lasting power supply and high efficiency solar panel.

Product	Standard Solar Powered GPS Synchronous Solar Powered RF Synchronous Solar Powered
Electrical System	Solar Power
Certificate	Comply with International Norms
Protection	Overcharge and Over Discharge
Battery Protection	Auto Close when Battery Running Under 9V
Blinking Modes	8 Different Modes (You can easily change the modes with a button.)
Synchronous Modes	GPS or RF
Season Mode	GPS Synchronous
Solar Panel Power	20W or optional
Battery	12V 20Ah Deep Cycle or optional
Durability	IR3
Protection Class	IP65
Operating Temperature	-30°C to 70°C
Operating Voltage	12VDC
Flasher Details	85 pieces 5 mm Led / 65 pieces 5 mm led or optional
Led Color Options	Red / Yellow
Flasher Diameter	300 mm / 200 mm
Max. Power Consumption	<4W
Body Structure	%100 Polycarbonate

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ACUSTICO PEDESTRIAN WARNING DEVICE

ACUSTICO is a product which is designed for safely traversing of pedestrians. Product has many working principals within. Thus, you can arrange it to obtain either buzzer or an aural warning or any voice you prefer.

Although there are many similar products are available in our country, **ACUSTICO** combines functions of several devices into one body structure so it gets the advantage of being prominent. The product is fully compatible with body structures of 200mm signal head lights. It can be also mounted on body of signal head lights on demand.

Mounting option to body of signal head lights

Sound level changing according to medium

Capable of playing desired sound

Pedestrain button option

Several Color options

Easy mounting

ACUSTICO is planned to provide safely travelling of visually impaired citizens in traffic.

ACUSTICO can be easily mounted to traffic light poles or as a seperate module under traffic headlight

ACUSTICO can be used as a pedestrain button when a green color led light is placed on it.

ACUSTICO can make aural warning sounds (please pass away, please wait). It can also make sound of “buzzer” sound according to RILSA standart when desired or optionaly any sound requested can be given as aural warning.

ACUSTICO measures the level of medium sound via microfon mounted on it and arranges the sound level according to this medium sound level or can make fixed sound level of aural warning by means of sound changing button mounted on it.

ACUSTICO if requested, can also operate when only visually impaired persons approach to intersection by means of a bluetooth module inside it or can provide the traversing safety by stimulating the traffic controller device as if the pedestrain button is pushed.

ACUSTICO gets both its energy and signals by means of a cable only tied to head light. It does not need any external power input or power supply. The user can change the usage method of the device as his/her will after receiving the device.

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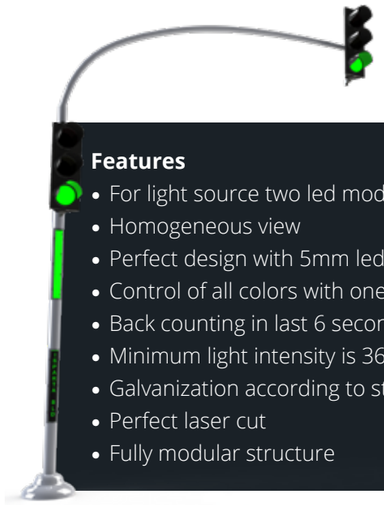
POLED DECORATIVE LED SIGNALING POLE



Features

- For light source two led modules that are closed and at IP65 protection class
- Homogeneous view
- Perfect design with 5mm leds comply with TSE EN 12368 standard wavelengths
- Control of all colors with one power supply
- Back counting in last 6 seconds with decreasing area of time bars
- Minimum light intensity is 360 candelas for red, yellow and green colors
- Galvanization according to standards
- Perfect laser cut
- Fully modular structure


FAYDALI MODEL BELGESİ

POLED

DECORATIVE LED SIGNALING POLE

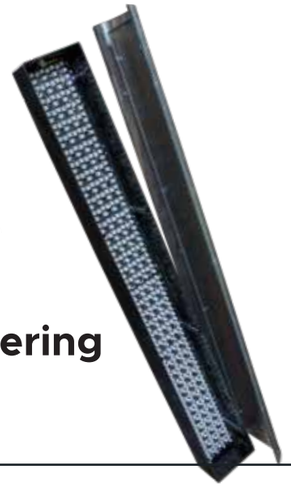
Scan & Watch

BACK COUNTER FEATURE

Stylish Design

Easy installation and Maintenance

%100 Domestic Engineering



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PORTABLE VMS

Portable VMS is a trailer-mounted self-powered mobile vehicle sign which can displays text messages and graphics in various font styles. The portable VMS can be easily controlled via web based software and also can be integrated into a remote programmable intelligent controller system. The sign deploy with an easy built in electric lifting mechanism (or hydraulic mechanism) which lifts the screen into position. Efficient technology minimized our sign maintenance cost and work in all weather conditions.

- 2/3 x 140W solar panels
- 2/3 x 12V, 120AH 12V lead-acid batteries
- Solar controller
- 2 x electrostatic coated battery boxes
- Hot Galvanized steel structure
- Anti-UV surface powder coating
- Retractable galvanized draw bar
- Built-in electric lifting mechanism (or hydraulic mechanism)
- Waterproof Rating: IP65
- Safety chains
- STOP light
- Licence Plate light
- 3G/4G module
- GPS Location
- Easy remote programming from PC or phone via internet

Pixel Pitch	20mm	50mm	Customize availble
Configuration Of Pixel	Amber, full colour or 5 Colour		
Resolution	48x48 pixel	48x24 pixel	Customize availble
Pixels Per Character	5x7 pixel		
Display Area	0.96m x 0.96m	2.4m x 1.2m	Customize availble
Power	AC / Solar panels and batteries (optional)		
Cabinet	Sheet Metal / Aluminium		
LED Driving Type	Constant current driving		
Programming Type	Control Center, Computer, Phone		

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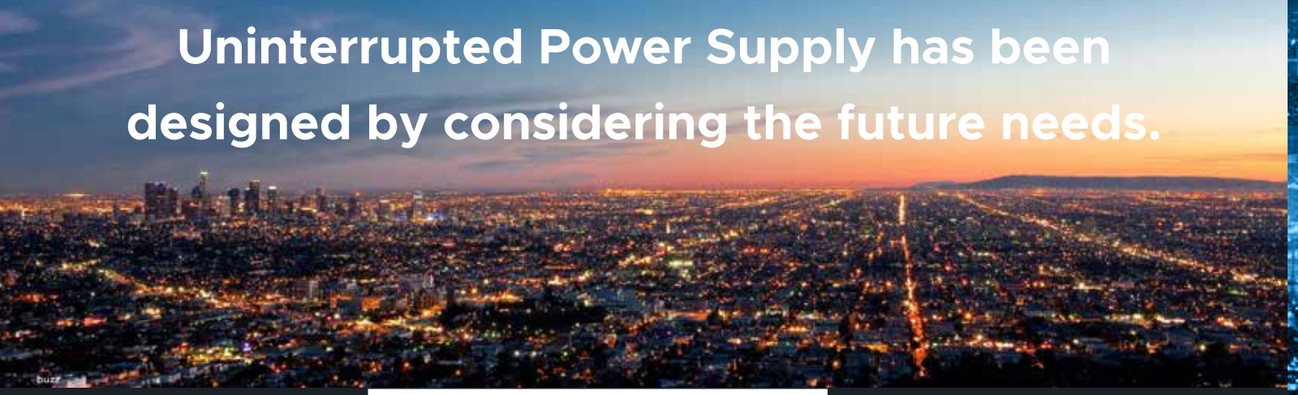
UPS UNINTERRUPTED POWER SUPPLY

Uninterrupted Power Supply (UPS) for signalization will start operating in less than 20 ms when the power is cut at a signalized junction and provides energy continuously at least 3 hours (optionally can be increased) to the controller device and to all traffic lights at the intersection. In this way, signalized intersections will continue to work even if the energy is interrupted and the safety of the intersection is provided.

Uninterrupted power supply automatically detects the input source (whether or not AC mains are available) and it then adjusts its internal settings. It can choose user priority operation mode (Bypass, charger, inverter, solar, grid) by itself. Also charge current, cut off current and charge activation current can be selected by the user. Considering the needs that can come to the system, there is a solar energy panel input. Charging the batteries and system feeding can be done by this solar energy.



Cabinet Protection Class	IP54
Inverter	Continuous 3000 VA, Instantaneous 3500VA
Operating Temperature	-40°C / +65°C
Input Voltage	90-280VAC 50Hz
Output Voltage	230 VAC 50Hz
Output power	3000W (Continuous)
Battery type	Gel battery
Battery Charge Voltage	27VDC
Battery Charge Cutoff Voltage	28.2VDC
Battery System Cutoff Voltage	20VDC
Protection	Over-Voltage / Temperature / Overload Protection
Solar Panel Support	Yes

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PRODUCTS | SOLUTIONS

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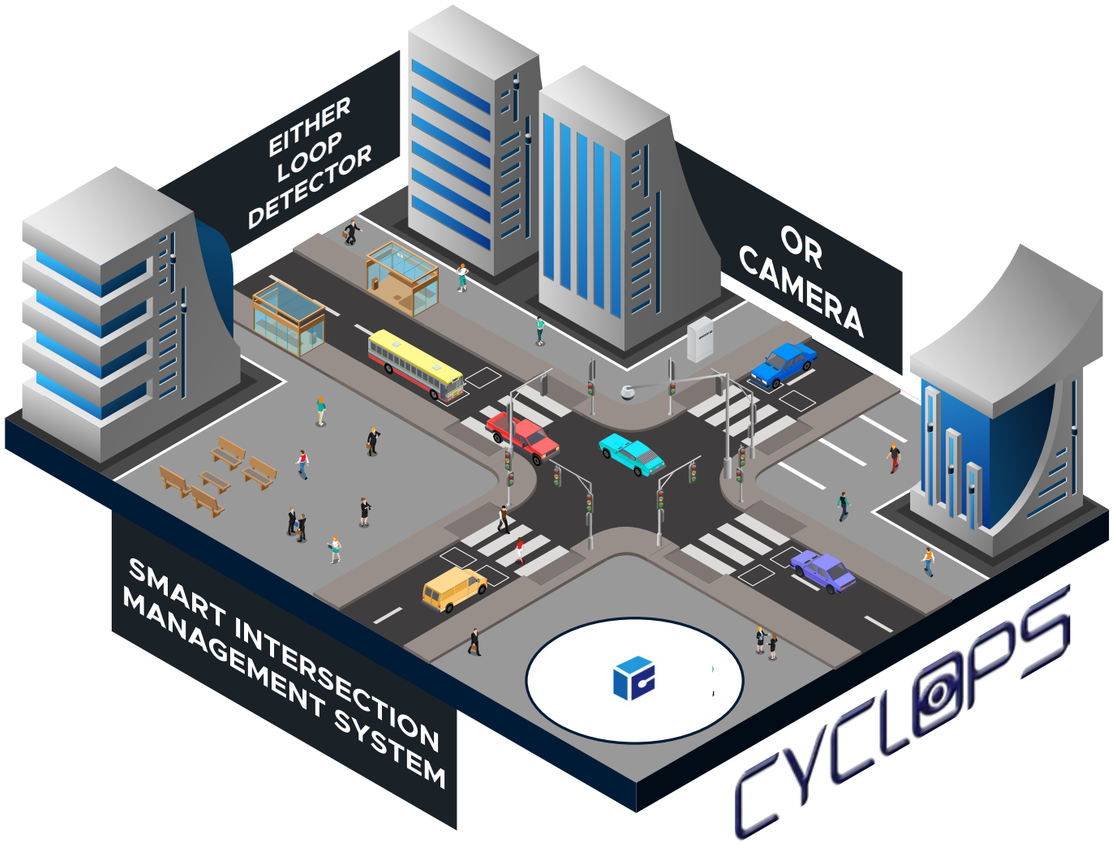
CYCLOPS
SMART INTERSECTION MANAGEMENT SYSTEM

Acrom Group has two different solutions in smart intersection management systems. Both solutions can be applied with high efficiency according to the customer demands, area conditions and external factors. In addition, by combining these two systems hybrid systems can be obtained. CYCLOPS smart intersection management system offers you a smart intersection management solution by using camera system and image processing technology or by using loop detectors placed on the road.

SMART INTERSECTION WITH
LOOP DETECTOR

SMART INTERSECTION WITH
CAMERA



CYCLOPS SMART INTERSECTION MANAGEMENT SYSTEM WITH CAMERA

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CYCLOPS Smart Intersection Management System with Camera is based on image processing technology with single or a multi-camera and is a real-time traffic control solution. Thanks to the technology it contains the system that dominates the entire intersection collects, analyzes and generates all data generated in the system such as average speed, the number of vehicles at the exit and classes of vehicles and by so it intervenes the traffic flow in real time and creates the necessary data for traffic survey studies.

CYCLOPS Intelligent Intersection Management System with Camera operates in line with not only determining the priority of the intersection according to the demands on the branches entering to the intersection, but also allows the phase duration of the intersection to be increased or decreased instantly according to the need.

CYCLOPS Intelligent Intersection Management System with Camera is a system that reacts truly in real time. The green times are determined instantly according to the intensity of the junctions. Also, all intersections of your city can work synchronously with smart corridor management. In this way, it provides serious contributions to country's economy by fuel savings; to human health by reduction of CO_2 emission, to human psychology and social life by time saving.

Scan & Watch

System Components

- **ammatis** Smart Traffic Controller (You can see page 13 for details.)
- Image Processor Unit
- Fisheye Camera
- 18 Meter Camera Pole and Apparatus
- Software

Image Processing Unit

- Object Recognition
- Object Count
- Object Tracking
- Object Classification
- Pedestrian Demand Management
- Queuing Detection
- Intersection Motion Models
- Congestion Detection in Intersection
- Traffic Flow Direction
- Traffic Arrival Direction
- Reverse Motion Recognition
- Traffic Flow Rate Detection
- Average Time Detection at the Intersection

The image processing unit has the latest generation i7 processor. Thanks to advanced level software and algorithms, a wide variety of traffic parameters can be obtained at high accuracy.

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CYCLOPS SMART INTERSECTION MANAGEMENT SYSTEM WITH CAMERA

Fisheye Camera

The cameras are traffic cameras which has integrated CMOS with capacity of 12 MP (mega pixels) image detection. The entire intersection is dominated at the same time thanks to its 360-degree panoramic image.

- Day / night feature
- Traffic analysis up to distance at least 60 meters from the stop line at the junctions
- Simultaneous monitoring of all lanes at the junction
- POE feature
- Ability to work in the temperature range of -30 ° C to + 60 ° C and up to 90% relative humidity
- Compatible to IP66 standard and IK10-rated vandal proof metal housing
- IP addressable at high resolution display
- IPv4, IPv6, TCP / IP, HTTP, HTTPS, UPnP, RTSP / RTP / RTCP, IGMP, SMTP,
- Supporting FTP, DHCP, NTP, DNS, DDNS, PPPoE, CoS, QoS, SNMP, 802.1X protocols

Camera Pole and Apparatus

18-meter camera pole and apparatus are used in the system for the purpose of providing full control of junctions and preventing occlusions.

- **18 meters height**
- **Galvanized according to the standards**
- **Burr-free and clean workmanship**
- **5mm sheet thickness**

Software

Virtual Loop Application Software

In the system, when vehicles enter or exit the detection zone, it shows the usage status of the region by changing the color of the region. Vehicle detection zones are realized with virtual loops. These loops can be easily applied by users drawn with application software which is user friendly. Red loops represent intersection entrance virtual loops, blue loops represent the exit virtual loops and yellow loops represent the tail zones. The image processor unit determines the values according to the drawn virtual loops.

Graphical user interface supports creation and modification of at least fifty (50) polygonal detection areas. Application software is ergonomic and easy-to-use. Installation and drawings of this software is done by our company. Besides users can easily perform virtual loop drawing with a training program when requested.

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CYCLOPS SMART INTERSECTION MANAGEMENT SYSTEM WITH CAMERA

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Analysis Software

For smart intersection control, the analysis software in the image processing unit generates various data and transmits this data to the processor of intersection controller in seconds.

Triggers of Vehicle Entry Demand to Intersection Arm

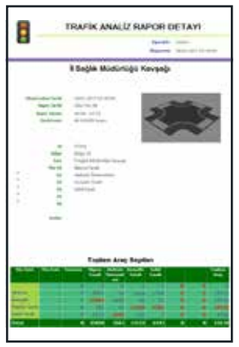
The yellow zones shown in the picture is used to produce transition requests that the vehicles give before entering the intersection. A region is drawn for each lane thus, if separate signal lights are used for left, right and straight travels, it can be triggered separately for these ways. Also, the percentage occupancy of this region is calculated. In this way, the vehicle waiting in the red-light density is generated. All this information is used in smart intersection control.

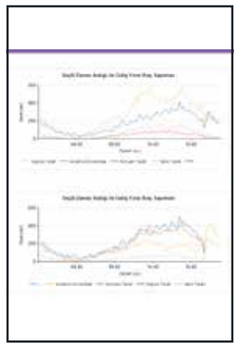
Triggers of Intersection Entry and Exit

The red and blue zones shown in the picture are used in the production of statistical data from their entrance to junction to their release. While a red zone is drawn for almost every lane, only 1 blue zone is drawn at each exit of the intersection so that each vehicle is at the crossroads is followed until their release. Trigger can be produced by entrance and exit of the vehicle. Many more details such as how many vehicles there are in intersection, data of direction and flows are produced. In this way, whether there is congestion in the junction are determined. All these data are used for the production of various statistical data (the number of vehicles using the intersection from which direction it comes and which direction it goes, the green times in the cycle, the classification of the vehicles using the intersection) as well as used in the intelligent intersection control.

Report Software

The report software is the platform that offers the data produced by the analysis software available to users in various formats and in a clear form. Thanks to the system's object tracking feature, vehicles can be determined from which junction arm they come and to which junction arm they go. Thus, the vehicle transportation survey data such as vehicle counting, vehicle flow direction counting and classification data are obtained.





System Reports

- Traffic Flow Direction Counts Report,
- Distribution Report of Traffic Intensity at Entry Exit Arms of Intersection (Origin - Destination Table),
- Junction Arms Tailing Report,
- Inner Intersection Congestion Distribution Report,
- At least 4 classes of Vehicle Classification Report,
- Average Traffic Speed Report for Intersection,
- Traffic Density Report

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CYCLOPS SMART INTERSECTION MANAGEMENT SYSTEM WITH LOOP DETECTOR

CYCLOPS Intelligent junction management system with loop detector is a real-time traffic control solution based on inductive detection technology.

CYCLOPS Intelligent junction management system with loop detector not only determines the priority usage of junction in line with the demands on the entering intersection approaches, but also allows to adjust the phase times instantly at the intersections according to demands. Also, vehicle data coming from the Hybrid Data Management Device placed back in junction arms is also included into smart junction algorithms. Thus, data from many traffic sensors associated with junctions such as loop detectors, tag readers, lidar sensors make intelligent intersection management system even more efficient.

CYCLOPS intelligent junction management system with loop detector literally is a system that reacts in real time. Green times are determined instantly according to the intensity of the junctions. Also, all junctions of your city can work synchronously by smart corridor management. In this way, contribution to country's economy is provided by fuel saving; contributions to human health by CO2 emission reduction, serious contributions to human psychology and social life by time saving.

Scan & Watch

System Components

- ƏMMATIO Smart Traffic Controller (You can see page 13 for details.)
- Hybrid Data Management Device (You can see page 31 for details.)
- Feedback Light
- Loop detector
- Software

Feedback Light

Feedback phase jumping principle is embedded into the CYCLOPS intelligent junction management system with loop detector. Drivers are provided to come over the loop detector by the feedback lights placed at intersections.

Scan & Watch

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CYCLOPS SMART INTERSECTION MANAGEMENT SYSTEM WITH LOOP DETECTOR

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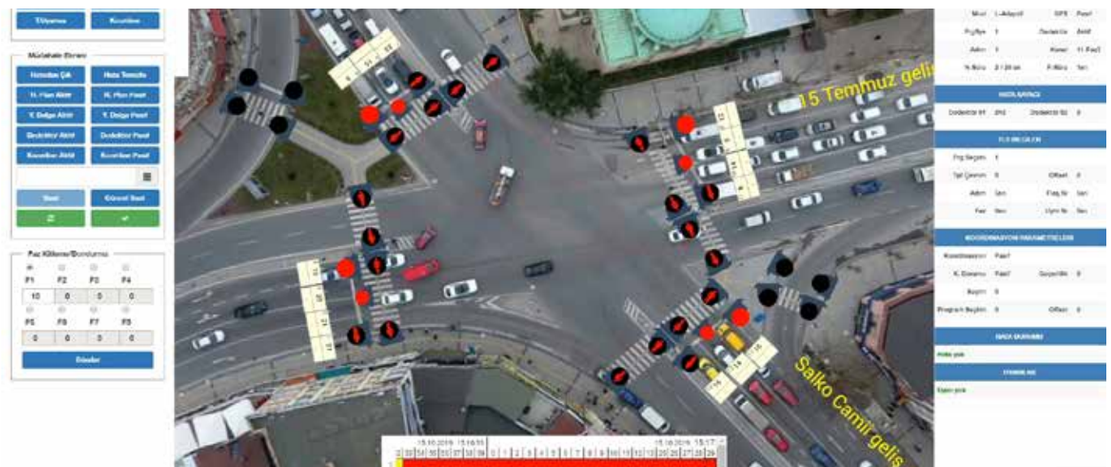
Loop Detector

Loop detectors create an electrical magnetic field thanks to the copper cable laid on the ground, and any metal passes over this ground, that is the electrical field, and perform the commands we want thanks to the settings on it. Loop detectors are used to detect vehicles in the CYCLOPS intelligent junction management system with loop detector.

- Inductance range: 50uH-300uH
- Frequency range: 20kHz-80kHz
- Frequency step number: 4
- Sensitivity: adjustable in 4 levels
- Response time: <60ms
- Automatic calibration at the end of power cut, temperature change, rain, snow and changes in similar environmental conditions.

Software

You can control the system in real time, track vehicle counts and access detailed traffic analysis through the Ritim Smart Transportation Management Platform (Page 29).



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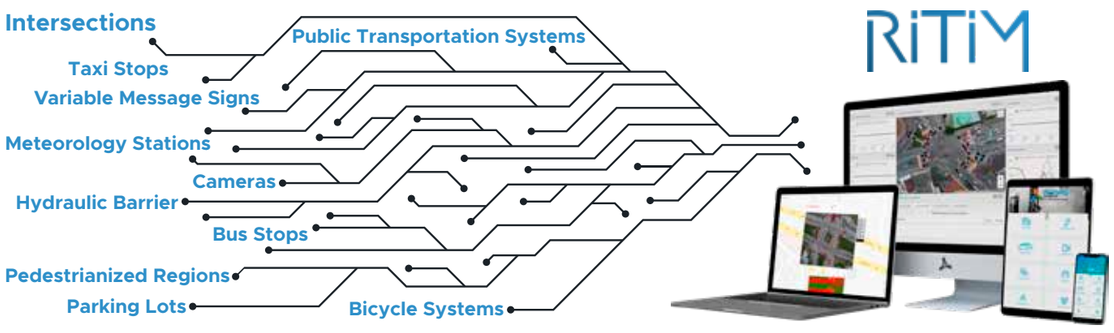
RiTiM **SMART TRANSPORTATION MANAGEMENT PLATFORM**

CATCH THE RHYTHM OF THE CITY

In today's world, increasing traffic volume brings along many problems and the importance of traffic management becomes more important with these problems. It will bring along parameters such as maximizing traffic control efficiency, energy savings, reduction of emissions and safety. Central Control System provides maximum efficiency by gathering traffic control systems in a single center.

In any province or region management of all control systems, such as;



It will provide you with great advantages in terms of cost, labor, aesthetics and time.

Features

- Easy access and applicability
- Ergonomic structure
- Real-time tracking and intervention chance
- Applicability of all communication channels
- Embedded system applications
- Unique intervention feature for smart structures
- Synchronization of systems
- Data exchange with fast and secure communication protocols
- Easy compatibility with new technologies

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RiTiM **SMART TRANSPORTATION MANAGEMENT PLATFORM**

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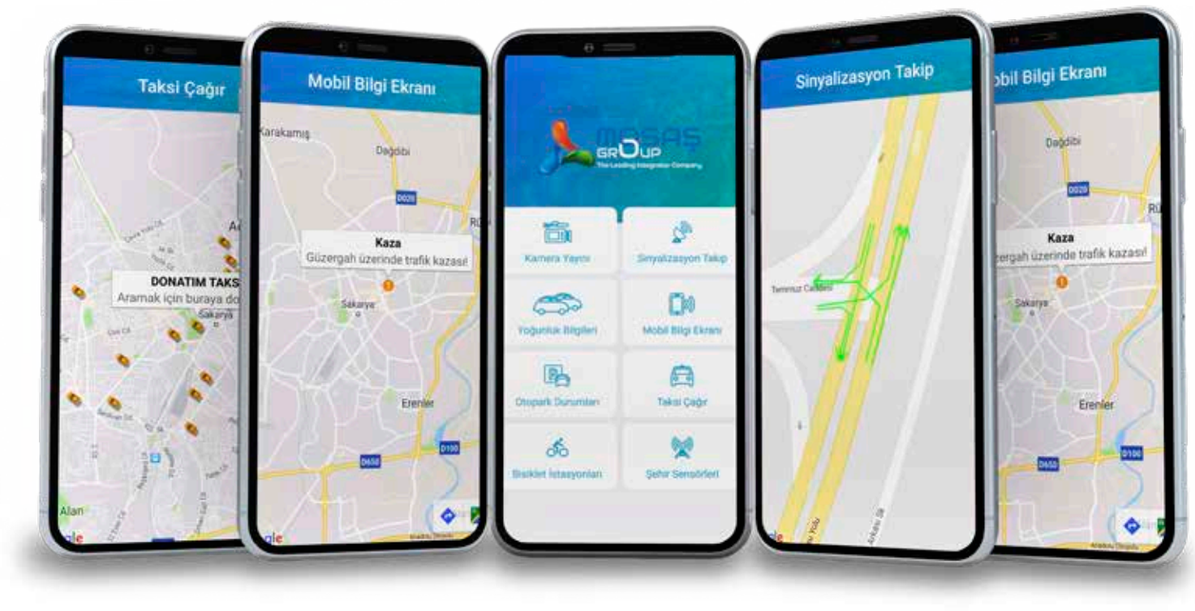
RiTiM PROVIDES ALL SMART TRANSPORTATION COMPONENTS

ANALYSIS REPORTS, PROMPT ACTIONS, ARRANGEMENT AND LIVE MONITORING



RiTiMOBİL

You can easily reach the RitiMobil application (with the QR Code) where users can easily reach to any point of the city, where they can watch intersections lively and can easily get information regarding various channels such as auto parks, cab stands, public transportation vehicles, city cams and sensors, accident announcements and instant complaints.

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HYBRID SMART TRAFFIC SYSTEMS

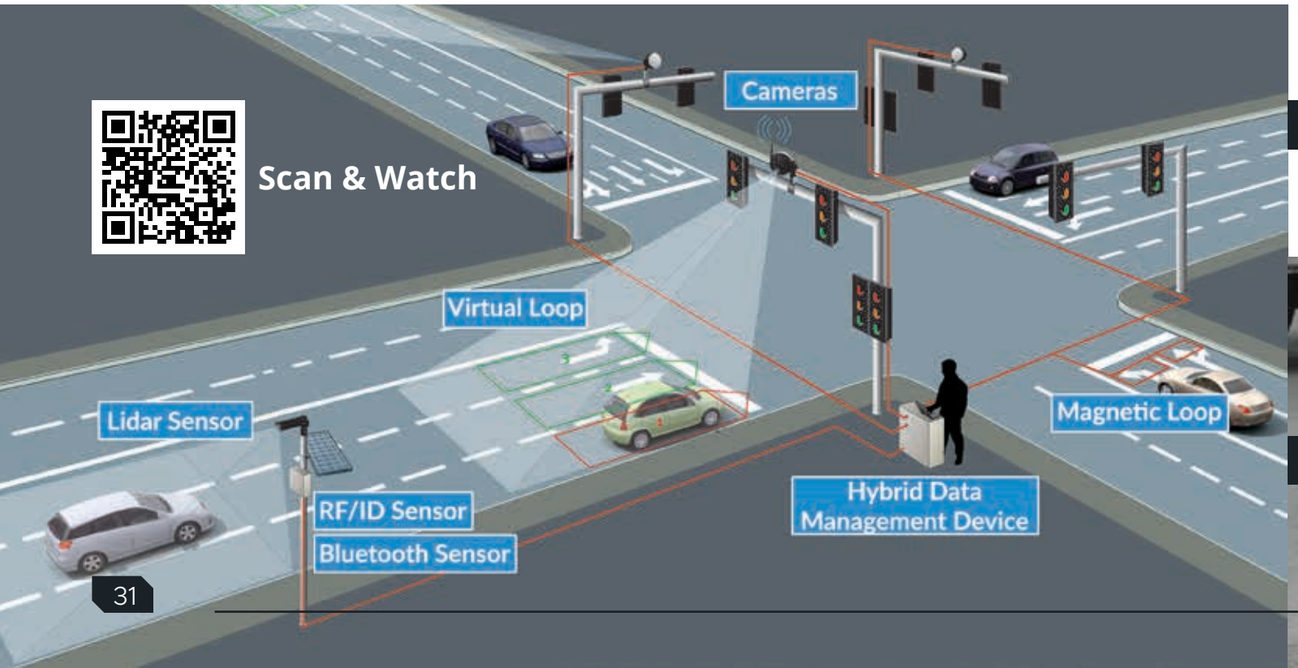
Hybrid Smart Traffic Systems is a system that all traffic sensors can be controlled from one single device. It also creates the interface of smart transportation system which is generated by using all these traffic sensors. If you want to use any sensor or more than one sensor at the same system Hybrid Smart Traffic Systems will assist you.

You can get information together or separately from lidar sensors, loop detectors, cameras, RF-ID readers and you can manage these traffic sensors from one center by means of improved Hybrid Data Management Device.

Thanks to this, you can take any information coming from lidar sensor or loop detector, cameras or RF-ID readers at anywhere into your traffic management algorithm, you can arrange corridors and you can also use these at travel time measurement systems. Besides, you can also conveniently use this information for control of public transport vehicles, vehicle counting systems, getting density of vehicles and inference of traffic systems. Hybrid Data Management Devices are compatible with all traffic sensors.

Smart transportation technologies developed by Hybrid Smart Traffic Systems:

- Travel time measurement systems
- Fully Adaptive Traffic Management System
- Traffic Management System with Feedback
- Priority Passing System
- Adaptive Corridor System
- Dimension Control System
- Puclic Transport Tracking System
- Vehicle Density and Counting System



HYBRID SMART TRAFFIC SYSTEMS

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RF-ID READER

CAMERA

BLUETOOTH

YOU ARE NO LONGER DEPENDENT TO ONLY ONE TRAFFIC SENSOR

LIDAR SENSOR

LOOP DETECTOR

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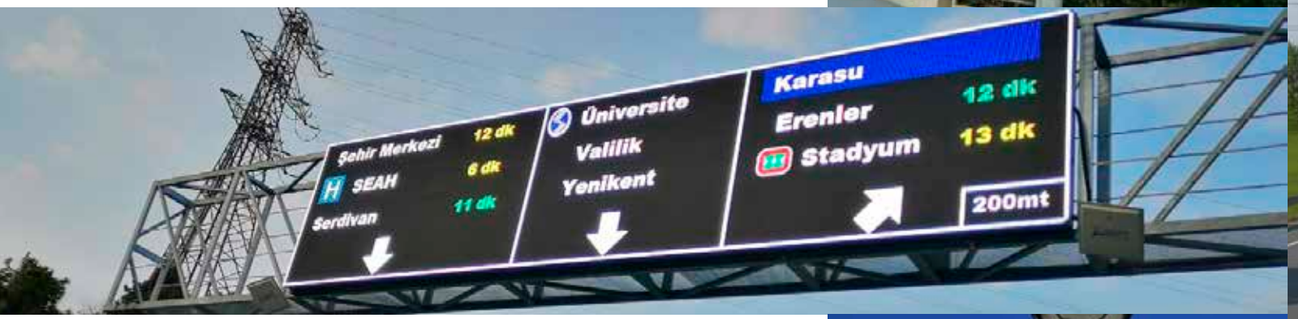
TRAFFIC ANALYSIS SYSTEMS

Bluetooth Based Traffic Analysis System (BlueSign)

Bluetooth Based Traffic Analysis System is determines the average travel times between preferred points by detecting the MAC addresses of bluetooth enabled devices that move with the vehicle such as bluetooth car kit, mobile phones, smart watch, wireless headphones and tablets.

BlueSign is installed at least at two points. For vehicles passing through these points, it detects the devices with bluetooth features, collects MAC addresses and transmits them to the central servers instantly. Average travel time is calculated between the preferred points on the central server. The average travel times obtained through the system are shared with the drivers instantly in the mobile application or through variable message signs. In this way, drivers are provided with information about density and travel times in the city.



BlueSign is easy to install and does not require calibration, and it is provides data transmission either wired or wireless. In case of malfunctions that may occur in communication channels, data is stored on the SD card on the device. When central communication is provided, this data is sent to the center collectively. In this way, data loss is prevented.

Operating System	Debian - Android - Ubuntu
Processor	AM335x 1GHz ARM Cortex-A8
Memory	512MB DDR3 RAM 4GB 8-bit eMMC On-board
Bluetooth	Version 4.1/ Single/Double Channel
Speed Detection	30sn/60sn/120sn Average Speed Data
Connection	10-100 Mbit Ethernet/ Wifi
Power Input	DC 9-24V
Operating Voltage	220 VAC or 20 Watt Solar Panel/20 Ah Gel Battery
Protection Class	IP66

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TRAFFIC ANALYSIS SYSTEMS

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RF-ID Tag Reader Based Traffic Analysis System

The RF-ID Tag Reader Based Traffic Analysis System reads passive RFID tags affixed to the windshields of vehicles and calculates average travel times between preferred points.

The system is installed at least at two points. RFID tags on vehicles passing through these points are read instantly and sent to the central servers. Average travel time is calculated between preferred points on the central server. The average travel times obtained through the system are shared with the drivers instantly in the mobile application or through variable message signs. With the RF-ID Tag Reader Based Traffic Analysis System, the following traffic analysis data can be obtained.

- Average Travel Time Determination
- Alternative Route Suggestion
- Average Vehicle Speed Measurement
- Vehicle Density Measurement

Technical Features

- 868 MHz EU (Europe) standard RFID frequencies can operate at a maximum output of 1 Watt (or 30dBm).
- The output power of the antennas can be set in the range of 0 - 1 Watt or 0 - 30dBm.
- It can read ISO 18000-6B and EPC-GEN2 compatible vehicle labels.
- KGM can read the ID numbers of HGS and OGS tags.
- It has RS232 or RS485 or TCP / IP communication port options.
- Antennas are designed for outdoor working conditions.
- It can read vehicle labels from a height of at least 6m.
- Readers can be mounted at the desired angle with suitable mounting apparatus.

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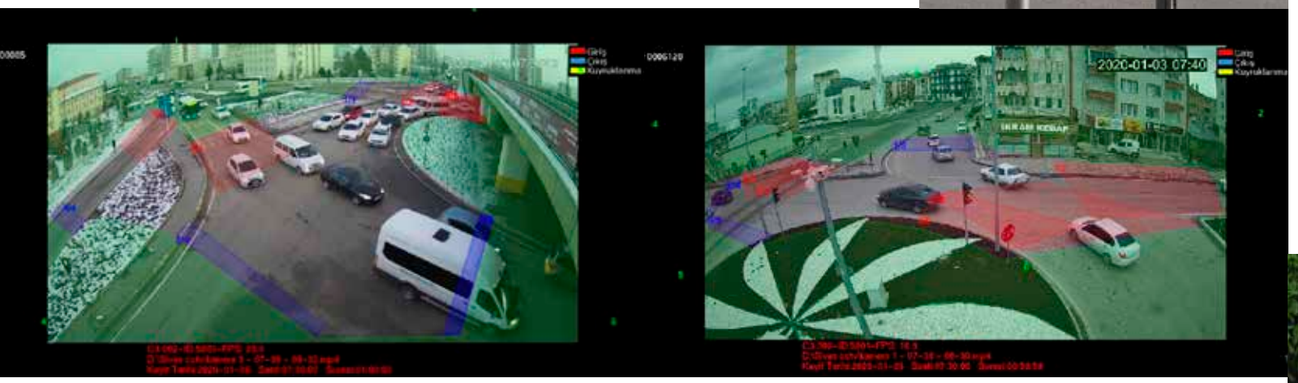
TRAFFIC ANALYSIS SYSTEMS

Camera Based Traffic Analysis System (CamClops)

CamClops Traffic Analysis System carries out the counting and classification of the vehicles passing through the determined cross section thanks to the image processing-based software.

Camera Features

- 1 / 2.8 ”2Megapixel CMOS
- H.265 and H.264 dual stream encoding
- 25 / 30fps @ 1080P (1920 × 1080)
- WDR (120dB), Day / Night (ICR), 3DNR, AWB, AGC, BLC
- Micro SD card slot up to 128GB
- 2.7 ~ 13.5mm varifocal lens
- Maximum IR LED Length 60m
- IP67, PoE +
- SNMP



Thanks to its ergonomic structure, CamClops can operate with mains energy or solar energy. Thanks to the SD Card on the device, images can be recorded for up to 20 days. Vehicle counting and classification is carried out by applying an image processing program on these recorded images, and the results are presented in the form of reports.

Vehicle classification takes place in 4 different classes.

1-Bicycle / Motorcycle **2-Car** **3-Van** **4-Bus / Truck**

OVERSIZE VIOLATION SYSTEMS

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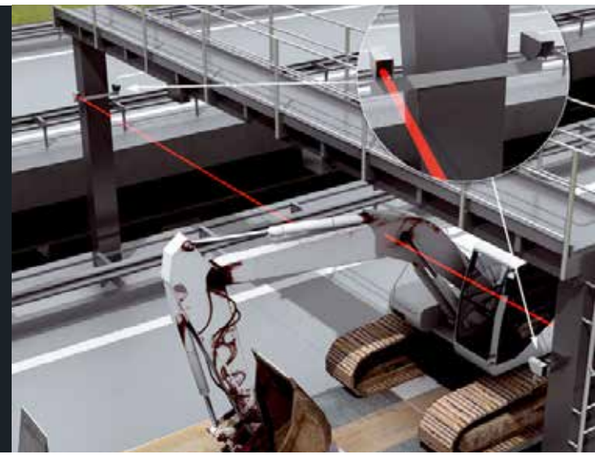
Oversize violation systems control the height of the vehicles. System is used in; tunnel entrances, low underpasses or bridges. In the system, the plate of the vehicle that violates the height is taken and the driver is warned by making the necessary warnings in the variable message sign. System can work in cases of; rain, snow or dust.

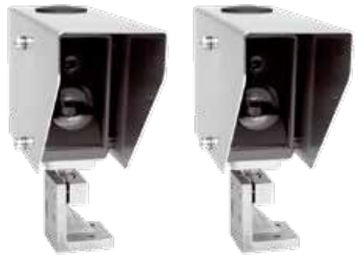
System Components:

- Height Detection Sensors
- Plate Reading Cameras (Optional)
- Variable Message Sign
- Carrier Constructions
- Control Cabinets



Height Detection Sensors Features:

- Aluminum body with anti-corrosion coating and high protection class
- Front lenses heated against fog / frost
- Weather protection against rain, snow and dust
- Accessory material in stainless steel
- Adjustable sensitivity
- Resistance to ambient light



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VARIABLE MESSAGE SIGNS

Variable Message Signs are designed to increase driving safety and comfort with dynamic information signs on the road route. The messages shown can include any information and templates, including road condition, safety warnings, and national messages.

- 12 mm, 16 mm, 20 mm, 25 mm, 31.25 mm pixel options
- All colors (full color), single color, double color options
- TCP / IP, Ethernet, MODBUS, PROFIBUS
- Wind resistance class WL9 and wind buck resistance TDB1
- Power Factor Correction (PFC) feature in the power supplies used
- Radiation power L3, L3*, L3 (T) level
- Color coordinate C2 level
- 2 (two) light sensors that automatically change the brightness
- Temperature sensor, humidity sensor, smoke detector, heaters and coolers
- Beam half-life of LEDs in laboratory conditions and nominal is at least 100,000 hours in operating current
- Whether LEDs are active or not, the ability of LEDs to detect short / open circuit and uncontrolled light emission status
- Self Protection feature of power supplies on conditions such as short circuit, overloading, over voltage and over temperature increase
- Brightness rates R3 level
- NTCIP protocol support
- Beam widths B1, B2, B3, B4, B5, B6
- Working temperature range T1 / T2 / T3 class
- Water and dust protection class IP66
- Aluminum cabinets
- Adding optional radar feature
- High quality LEDs

NTCIP
EN 12966

VARIABLE MESSAGE SIGNS

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Technical Features

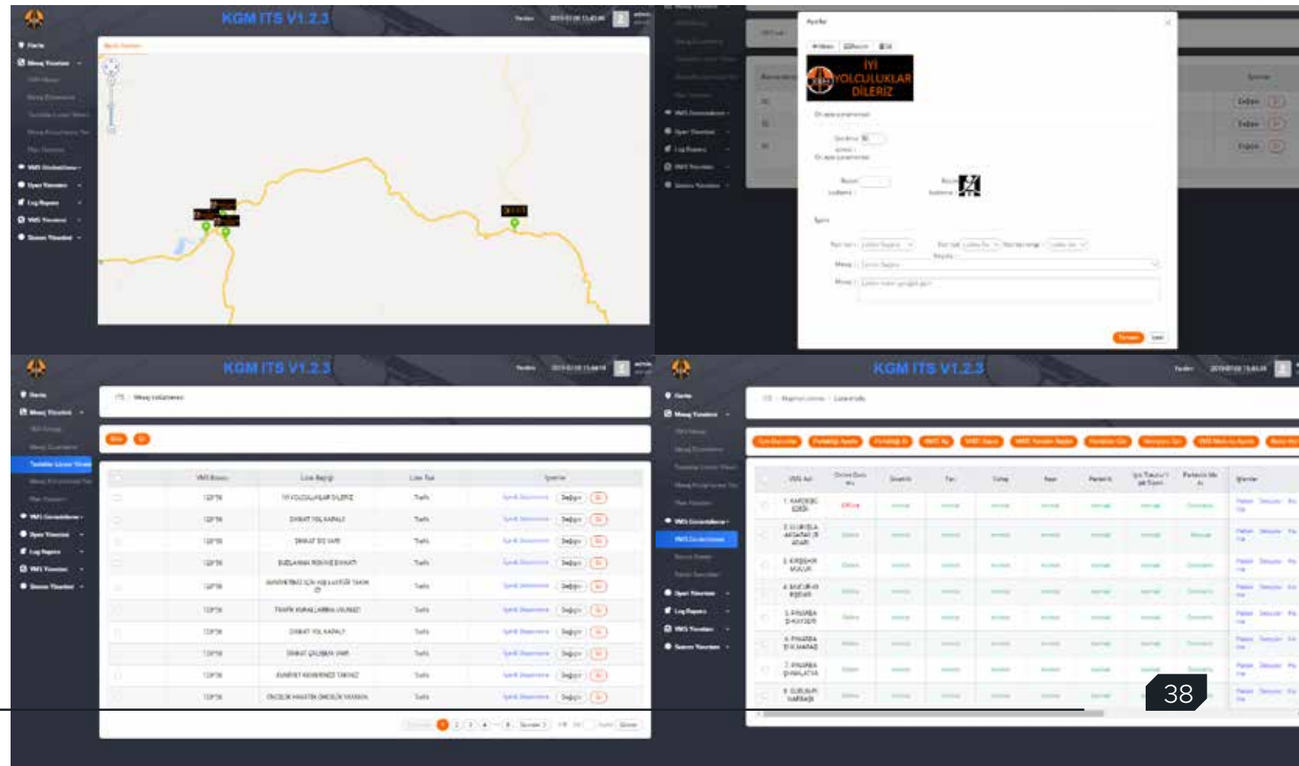
- Industrial Aluminum Case
- Industrial Modem
- Protection Against Electrical Errors
- Android Operating System
- NTCIP Protocol Support
- Communication with Central System

ANDROID
OPERATING SYSTEM

Variable Message Signs Central Control Software

You can view and change the messages on the screens instantly with the variable message Signs central control software. In addition, you can access instant technical details and measurements in the variable message signs.

- Web based
- Message creation editor
- Creating a plan
- Creating smart scenarios
- NTCIP protocol support
- Map based
- Creating an alarm
- Error logs and transaction reports
- User identification and authorization
- Instant monitoring of temperature, fan, voltage, cover, brightness, led errors and conditions



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VARIABLE TRAFFIC SIGNS

NTCIP
EN 12966

Effective information can be given to the drivers about the variable traffic signs used in the tunnel control systems and bridge - underpass entrances and lane guidance and speed limit. However, during the study effective directions can also be made on the closed lanes and road transfers thanks to the variable traffic signs. Production is carried out as full matrix or dot matrix. The status of the variable traffic pointers, connection information, fault information, temperature and message information can be monitored and controlled from the control center. Variable Traffic Signs are **EN 12966** certified.

Dot Matrix

Variable Traffic Signs

Full Matrix

Variable Traffic Signs

SPEED WARNING SYSTEMS WITH RADAR

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Features

- Full matrix or dot matrix options
- Electric or solar powered options
- High radiation power
- High resolution
- LED color options
- Special cabin design
- Compatible to EN 12966 standards
- 24 GHz Doppler technology
- Maximum 4 W power consumption
- Maximum EIRP power 20dBm
- Measurement up to 5 km/h
- Measuring the speeds of oncoming or driving vehicles separately

Scan & Watch

VMS + RADAR

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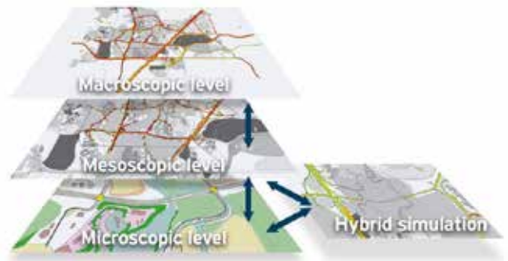
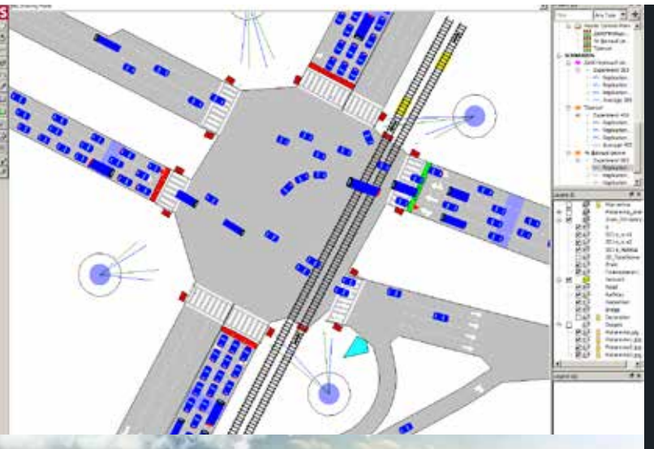
AIMSUN SIMULATION SOFTWARE

Aimsun: Unlimited Traffic Modeling

Aimsun is a traffic modeling software that allows you to model everything from the smallest area to the whole region. With thousands of licensed users in public institutions, various private institutions and universities, Aimsun offers macroscopic, mesoscopic, microscopic and hybrid simulation in one software.





Aimsun is the decision-making mechanism for real-time traffic management. It provides high-speed traffic simulation even for large areas. Aimsun is an excellent background assistant for smart traffic systems with a lot of rich content. Some of the many features it provides;

- Macro traffic simulation
- Micro traffic simulation
- Flow modeling
- Active transportation and demand management
- Signalization management
- Real-time transportation information
- Road weather management
- Traffic accident and incident management
- Work area mobilization and safety
- Fuel consumption calculation
- Pollution, carbon dioxide emission values calculation

SMART TRANSPORTATION TECHNOLOGIES | WEIGHING TECHNOLOGIES | LIGHTING | STEEL CONSTRUCTION – POLE

AUTOMATIC LEVEL CROSSING BARRIER SYSTEM

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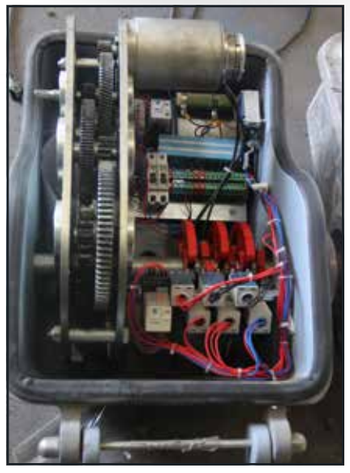
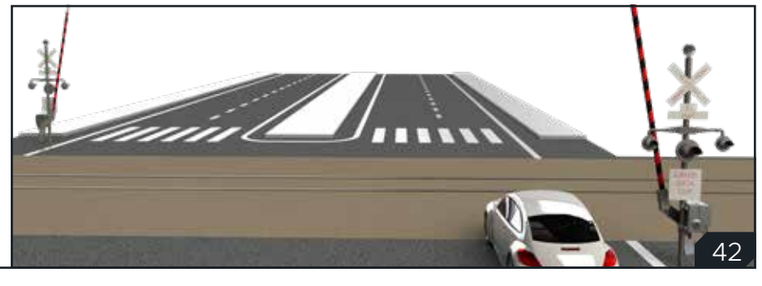
AUTOMATIC LEVEL CROSSING BARRIER SYSTEM

- Essential component selection
- Power-actuated arm-up position
- Gravitational free fall in case of power outage or signal loss
- Maintaining current threshold value in case of sudden movements
- Radial motor movement speed control through gear system
- Load balancing for minimum power consumption
- Magnetic lock preventing reverse action of motor in powered state
- Gear system rotating speed and position control,
- Oil sump for mechanical moving parts,
- Heater, cooler, humidity balancer inside the mechanism,
- Voltage and current control,
- Arm status information (broken, position, speed),
- Stainless aluminum body,
- Grounding installation against catenary system voltage.





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METEOROLOGY SYSTEMS

Data from weather sensors;

- Temperature
- Relative humidity
- Air pressure
- Rainfall Type, Rainfall Intensity and Amount
- Wind Direction and Speed
- View Distance
- Snow Layer Thickness
- Road Status Information (Icy)

TECHNICAL FEATURES

AIR TEMPERATURE DETECTOR		AIR PRESSURE DETECTOR	
Measurement Principle	NTC	Measurement Principle	MEMS Capacitive
Measurement Range	-40°C / +60°C	Measurement Range	300hPa / 1200 hPa
Accuracy	±0.2°C	Accuracy	±1.5 hPa
RELATED HUMIDITY DETECTOR		**WIND DIRECTIONAL SENSOR**	
Measurement Principle	Capacitive Sensor	Measurement Principle	Ultrasonic
Measurement Range	%0 / %10	Measurement Range	0° / 359.9
Accuracy	% ±2	Accuracy	±3°
PRECIPITATION DENSITY DETECTOR		**VISION DISTANCE SENSOR**	
Measurement Principle	24 GHz Doppler radar	Measurement Principle	Illuminated Light
Resolution	0.01 mm	Measurement Range	10m / 3000 m
Measurement Range	Precipitation piece size 0.3mm – 5 mm	Accuracy	±10 m
PRECIPITATION TYPE DETECTOR		**VISION DISTANCE DETECTOR**	
Precipitation Type	Rain/Snow	Measurement Principle	with Laser
		Measurement Range	0-10 m
		Accuracy	±2 mm
		Montage Height	Min 8m

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WEIGHING TECHNOLOGIES

Accurate Weighing
Quality Labour
Fast Service

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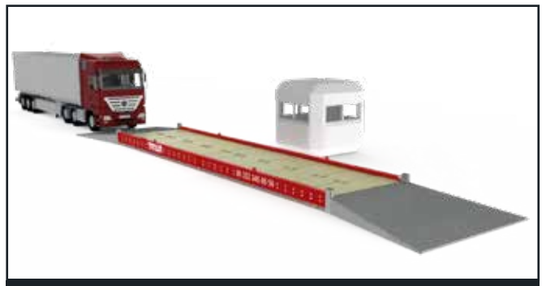
VEHICLE WEIGHBRIDGES

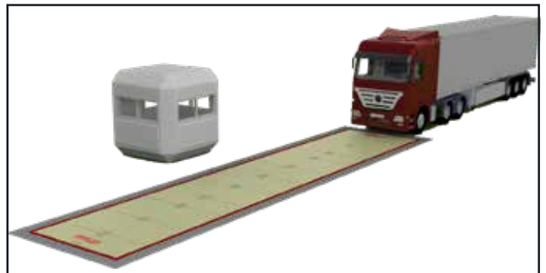
ACROM Vehicle weighbridges are manufactured by our professional staff as a result of R&D/Design studies made with the principles of advanced technology and qualified work ship by our company. Services are offered to our customers by following new technologies continuously and prioritizing quality in order to achieve more accurate and sensitive measurements in our systematic structure.

We serve vehicle weighbridges usage to our customer's by combining structure that has minimum maintenance cost, long-lasting durability structure, widespread service network, with no spare part problems and with software structure that is user friendly and fast processing performance.

ACROM truck weighbridges are presented to our customers by following new technologies for reliable and precise measurements based on high precision in our systematic structure and keeping quality at the forefront.

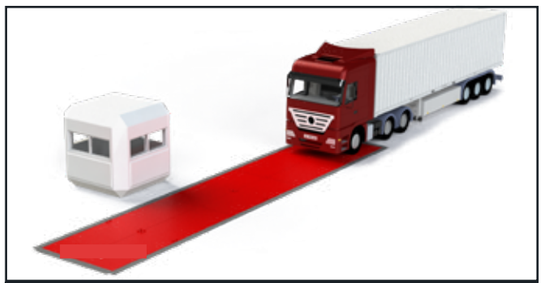


RAMP MOUNTED I-BEAM WEIGHBRIDGES

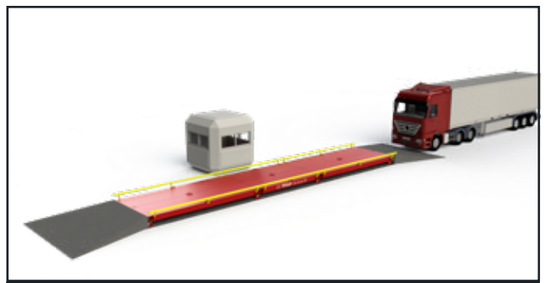


PIT MOUNTED I-BEAM WEIGHBRIDGES

It is a platform I type beam system in column truck weighbridges and the platform main carrier beams are specially produced in the IPE series DIN 1025 norm. Platform carrying capacity is 50% more than its nominal capacity. The top coating hair of the platform (St37 A1 quality flat sheet) can vary according to the weighing capacities. Upper coating sheets are welded (under gas) to auxiliary carriers (pallets).



RAMP MOUNTED MODULAR WEIGHBRIDGES



PIT MOUNTED MODULAR WEIGHBRIDGES

Modüler taşıt kantarlarında platform V tipi kiriş sistemi özel olarak imal edilir. Platform taşıma kapasitesi, nominal kapasitesinin %30 fazlasıdır. Kantar kapasitelerine göre platform saclarının (St37 A1 kalite düz sac) et kalınlığı değişiklik gösterebilir. Üst kaplama sacları sac büküm traverslere kaynaklı (gaz altı) birleştirme yapılmaktadır.

VEHICLE WEIGHBRIDGES

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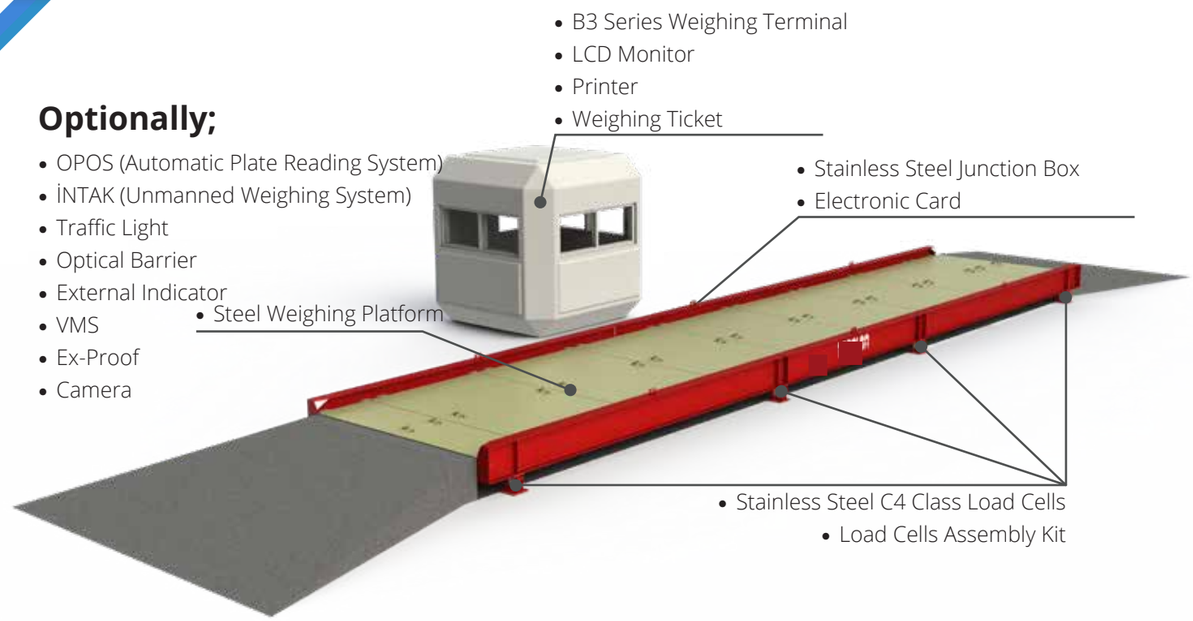
Optionally;

- OPOS (Automatic Plate Reading System)
- İNTAK (Unmanned Weighing System)
- Traffic Light
- Optical Barrier
- External Indicator
- VMS
- Ex-Proof
- Camera



B3 is a device that can perform your weighing applications with its advanced software functionality. It contains an approved scale indicator (B3) and an operating system (Android) that runs your application. To use the device just connect the monitor, keyboard, mouse and printer. The load cells used are OIML R60 C-class certified, 3000/4000 division, stainless steel structure, IP69K (EN 60529) protection class, allowing them to be used in the petroleum and chemical sectors with their ability to work for many years under difficult conditions and ATEX versions.

The junction box provides long-lasting protection with its stainless-steel structure. In addition, thanks to the electronic card potentiometer, it offers the following features;

- Adjustable scale platform corners
- Certified protection
- Advanced humidity and dust resistance
- Silicone connection points
- Possibility to connect 10 load cells

There are steel-based mounting accessories around the load cells for the shock movements that the vehicles that will come to the scale can do during the maneuver and irregular loads that may come to the scale at the entry-exit. The mounting accessories act as suspension and buffering, protecting against irregular loads, thermal expansions and axis leaks that can be harmful to the scale.

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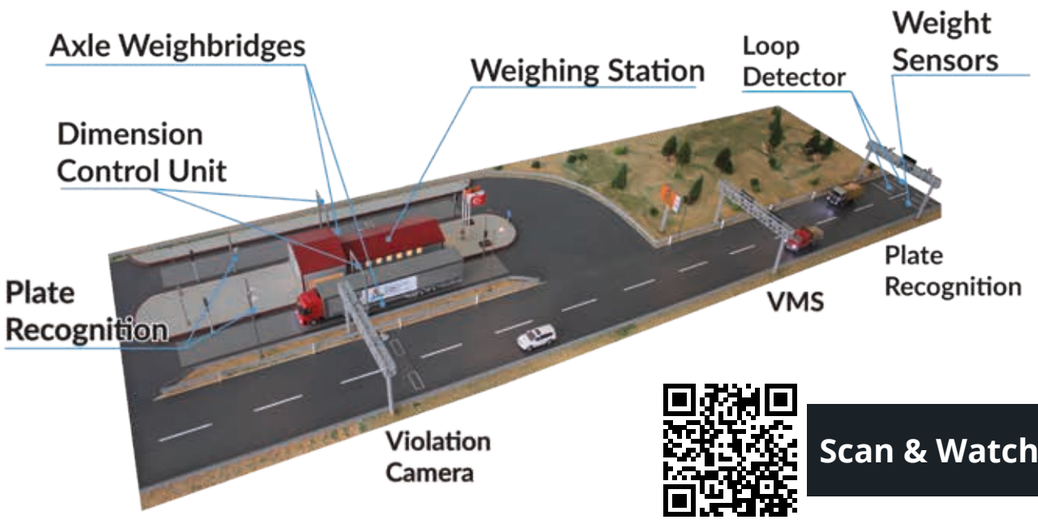
WEIGH IN MOTION WITH PRE-NOTICE (WIM)

The system aims to enable heavy transport vehicles such as trucks, tow trucks, tankers, buses and vans to carry out weight and size measurement according to the rules with the controls to be made by modern stations to be established in different regions. The System Works integrated with the information network structures of government agencies.

Weigh in Motion System with Prior Notice prevents especially road deterioration and rapid wear of vehicles under excess tonnage and prevents traffic accidents due to these. Other important benefits are the prevention of unfair competition and encouraging compliance with the rules. In addition, vehicles with a weight below critical level are provided to continue directly without entering the station, and densities at roadside control stations are removed. This prevents drivers from wasting time and saves fuel.



Scan & Watch

WEIGH IN MOTION WITH PRE-NOTICE (WIM)

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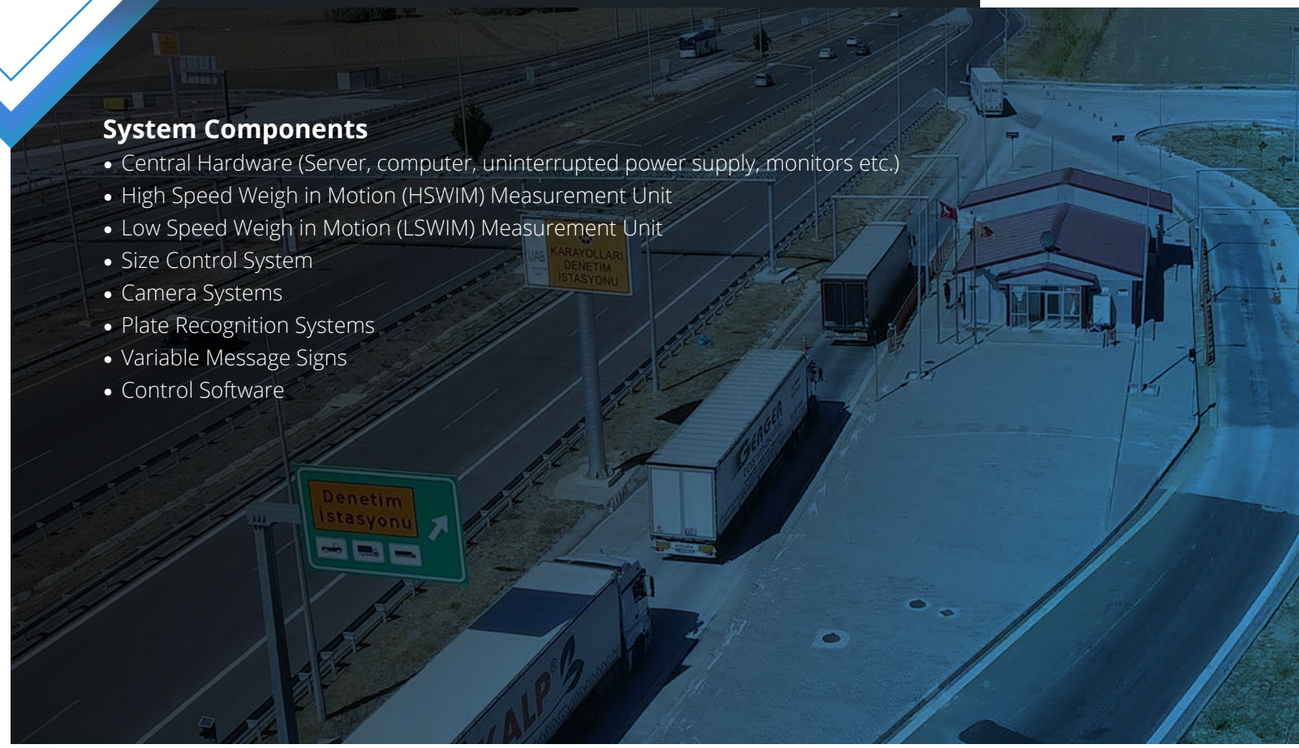


System Components

- Central Hardware (Server, computer, uninterrupted power supply, monitors etc.)
- High Speed Weigh in Motion (HSWIM) Measurement Unit
- Low Speed Weigh in Motion (LSWIM) Measurement Unit
- Size Control System
- Camera Systems
- Plate Recognition Systems
- Variable Message Signs
- Control Software

High Speed Weigh in Motion System

High speed weigh in motion system is generally used for prior notice of low speed weigh in motion system.

HSWIM system is consisted of quartz weight sensors placed on the roads which have high stability and endurance, loop detectors, plate recognition systems, variable message signs and control cabinets. Axle and gross weights of heavy shipping vehicles are detected with high accuracy and summarily and weight and axle numbers/groups information of vehicles can be obtained by this system. So that vehicle types are classified and compared with legal weight limits correspond to those types.

Vehicles that are detected as over weight limits in consequence of evaluation are recorded by means of plate recognition and camera systems. For more sensitive measurement, message of entrance to low speed weigh in motion station placed at roadside is announced on variable message signs. On the other hand, message of keep going by not entering to roadside station is announced on variable message signs for vehicles that are not over weight limits. So that by allowance of vehicles for keep going, vehicle jam in roadside stations are prevented. This situation prevents drivers' time wasting and provides fuel savings.

WEIGH IN MOTION WITH PRE-NOTICE (WIM)

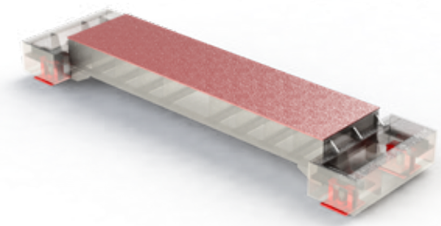
Quartz High Speed Weight Measurement Sensors

- High sensitivity with 2.3% error rate (Akıncılar WIM Project)
- Quartz technology
- High measurement accuracy
- Long-term use life
- Compatible with OIML R134 (accuracy class D2)
- Wide measurement range
- High speed weighing
- Protected against temperature fluctuations
- Fast and easy montage

Low Speed Weigh in Motion System

The low-speed motion weighing system is used in roadside control stations applications managed by government agencies, where it is necessary to accurately determine the weight of the vehicles. The prior warning system is the supporting structure of the weighing system in low speed motion. If desired, the weighing system can also be used alone in low-speed motion.

Axle scale, which is the component of the weighing system in low speed motion, is the unit where the axle weights and gross weights of the vehicles are determined. The weighing process is carried out automatically on the move within the low speed limits of the vehicles.



In the structure of the weighing system in low speed motion; there are also loop detectors, license plate recognition systems, camera systems, laser scanners that make sizing, indicators, control cabinets and software.

At low speed weigh in motion system; axle weights, gross weight, plate and dimensions of the vehicle entering the station are measured and it is determined whether it exceeds legal limits via the control software. Accordingly, automatic penalty actions are carried out.

INTAK- UNMANNED WEIGHING SYSTEM

www.acromtech.com

ACROM brand INTAK system, which is suitable for use in enterprises weighing in series, offers many advantages. Thanks to the system, automatic recognition of the vehicles and weighing operations can be made without the need for an operator for ticket transactions. Since the system operates without an operator, time is saved. The waiting times of the vehicles are shortened, thus saving fuel. Since there is no operator in the system, operator-based errors are completely eliminated. The system offers the possibility of integration with different software in the factory.

Scan & Watch

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OPOS- AUTOMATIC PLATE READING SYSTEM

Compatibility with the industrial conditions provided by Android operation in the B3TX weighing terminal ensures that the system operates for many years. With its integrated ANPR plate reading camera and the compatibility of the Android operating system, it keeps the work safety at the forefront with its structure that is far ahead of the automatic plate solutions of other companies in the weighing sector and definitely does not allow the system to fail with user error.

%98 Plate Reading Rate

Taking a Photo of the Vehicle

Single and Double Direction (Front&Rear) Plate Reading

Advanced Reporting System

Multi Country License Plate Support

OPOS and B3TX integration eliminates the possibility of stopping your vehicle on scale with its robust structure in which Windows operating system and user-related errors are not experienced, the system does not stop during its working life and data loss is not experienced.

OPOS detects vehicles coming to the scale thanks to the plate reading cameras operating in one or two directions. Vehicle license plates detected; Date / time, Camera ID, license plate data and vehicle image are recorded in the B3TX database. The latest plate number read by the system is queried in the B3TX database and determines the vehicle's entry mode for 1st Weighing or 2nd Weighing. The plate reading system is integrated in the Single Weighing mode manually.

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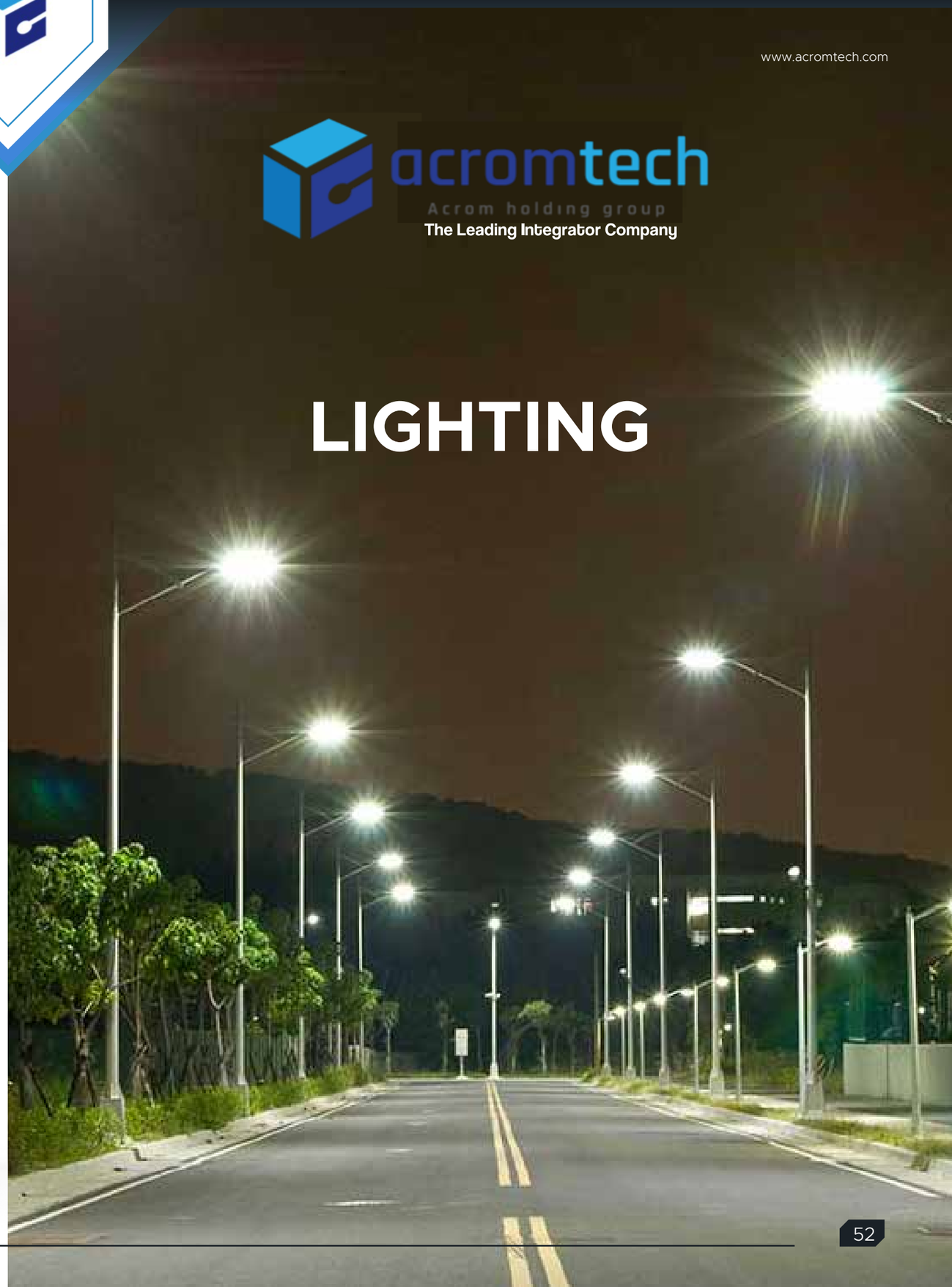
The Leading Integrator Company

LIGHTING



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ML2 SERIES SOLAR POWERED LIGHTING FIXTURE

ML2 Series solar lighting fixtures are produced in 3 models.

ML2A SERIES

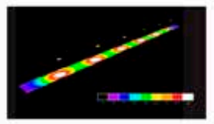
ALL-IN-ONE

ML2B SERIES

ALL-IN-TWO

ML2C SERIES

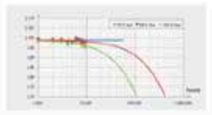
SEPARATELY



Based on our experience in road lighting, keeping the balances of average illumination, brightness and uniformity to improve the efficiency of light utilization

Strictly control the light dispersion and reduction caused by secondary optics, reduce the unevenness of blue light and yellow light, and ensure the accuracy and consistency of secondary optics

The lens uses outdoor special PC material, light transmittance ≥90% and better UV resistance



Using well-manufactured LED chip, lower light decay, higher brightness, less color temperature drift and blue light hazard

LIGHTING FIXTURES

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MLE SERIES
LARGE AREA LIGHTING FIXTURE

ML1C - ML2C SERIES
GARDEN LIGHTING FIXTURE

ML6B SERIES
STREET LIGHTING FIXTURE

ML5BT SERIES
STREET LIGHTING FIXTURE

ML5BS SERIES
STREET LIGHTING FIXTURE

MLD SERIES
LARGE AREA LIGHTING FIXTURE

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LIGHTING FIXTURES

ML5B SERIES
STREET LIGHTING FIXTURE

ML7B SERIES
STREET LIGHTING FIXTURE

ML2E SERIES
LARGE AREA LIGHTING FIXTURE

ML4B SERIES
STREET LIGHTING FIXTURE

ML3E SERIES
TUNNEL LIGHTING FIXTURE

ML3B SERIES
STREET LIGHTING FIXTURE

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STEEL CONSTRUCTION - POLE

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STEEL CONSTRUCTION

M TYPE
CONSTRUCTION

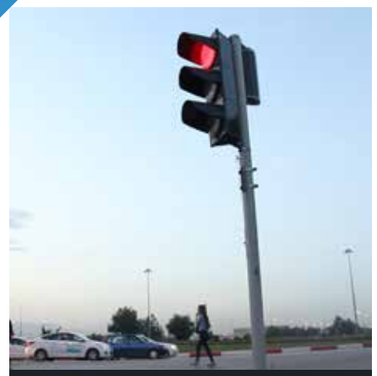
N TYPE
CONSTRUCTION

PLATE RECOGNITION SYSTEM
CONSTRUCTION

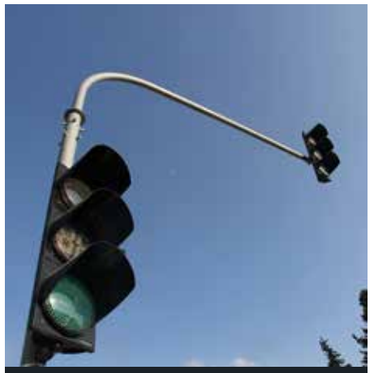
L TYPE
CONSTRUCTION

SMART TRANSPORTATION TECHNOLOGIES | WEIGHING TECHNOLOGIES | LIGHTING | **STEEL CONSTRUCTION – POLE**

POLES



STANDARD POLE



OVERHEAD POLE

GALVANIZED POLE

TAG SIGNAL POLE

FLAG POLE

STREAMER POLE

MOBESE POLE

CAMERA POLE

LIGHTING POLE

POLYGON POLE

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Ürün Kodu / Product Code

ACR 20

550 Gr | 20 LED | 33 W/h | 9 Wp

Turkey Discover the potential

2 YEARS WARRANTY

CE

Genel Özellikler / General Specifications

Gövde Body	Plastik Enjeksiyon Gövde Plastic Case / Policarbon
LENS LENS	Yüksek Geçirgenlik PMMA PMMA Glass
Çalışma Voltajı Working Voltage	7,4V
Çalışma Sıcaklığı Working Temp.	-0 C +65 C
Gövde Rengi Body Color	Antrasit Grey
Renk Sıcaklığı Color Temp.	3000-5500 K
Verimlilik Efficency	700 Lümen
Ölçüler Dimensions	455x180x70mm

Çalışma Özellikleri / Working Specifications

- Harekette Tam Güç / Yarım Güç / Motion full power/DIM mode
- Microdalga Hareket Sensörü / Microwave motion sensor
- 5-8 Saat Şarj Olma / 5-8 Hours Charge Time
- CREE, LG, OSRAM LED

700 Max Lümen | Ip65 Sızdırmazlık | 12 Saat Çalışma | 2 Gerçek Garanti

Solar Panel Özellikleri / Solar Panel Specifications

- 12V / 9Wp Mono PERC Solar Panel
- 170x350x4mm

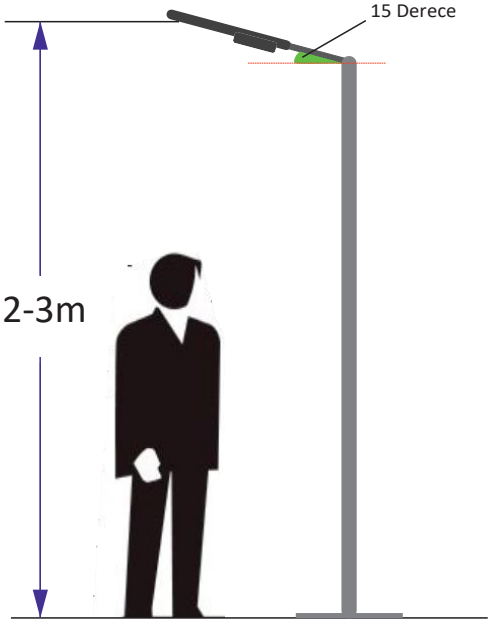
25 Yıl Çalışma Ömrü | 10 Yıl Minimum %90 Verimlilik

Batarya Özellikleri / Battery Specifications

- 7.4V / 6600mAh Lithium-İyon / LifePo4
- 2000 Döngü Şarj - Deşarj — 2000 Cycle Charge -Decharge
- -0 C +65 C Sıcaklık Aralığı — -0 C +65 C Working Temp.

2000 Cycle | 1. Akım Koruma | 2 Gerçek Garanti

Kurulum Yüksekliği / Installation Height



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Ürün Kodu / Product Code — ACR 40

750 Gr | 40 LED | 48 W/h | 11 Wp

Genel Özellikler / General Specifications

Gövde Body	Plastik Enjeksiyon Gövde Plastic Case / Policarbon
LENS LENS	Yüksek Geçirgenlik Polikarbon Policarbon Glass
Çalışma Voltajı Working Voltage	7,4V
Çalışma Sıcaklığı Working Temp.	-0 C +65 C
Gövde Rengi Body Color	Antrasit Grey / Opsiyonel
Renk Sıcaklığı Color Temp.	3000-5500 K
Verimlilik Efficency	1100 Lümen
Ölçüler Dimensions	455x180x70mm

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2 YEARS WARRANTY

CE

Çalışma Özellikleri / Working Specifications

- Harekette Tam Güç / Yarım Güç / Motion full power/DIM mode
- Microdalga Hareket Sensörü / Microwave motion sensor
- 5-8 Saat Şarj Olma / 5-8 Hours Charge Time
- CREE, LG, OSRAM LED

1100 Max Lümen | Ip65 Sızdırmazlık | 12 Saat Çalışma | 2 Gerçek Garanti

Solar Panel Özellikleri / Solar Panel Specifications

- 12V / 11Wp Mono PERC Solar Panel
- 170x350x4mm

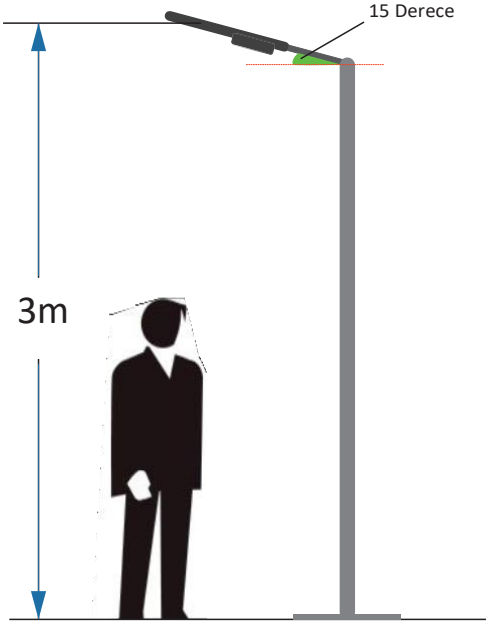
25 Yıl Çalışma Ömrü | 10 Yıl Minimum %90 Verimlilik

Batarya Özellikleri / Battery Specifications

- 7,4V / 6600 mAh Lithium-iyon / LifePo4
- 500-2000 Döngü Şarj - Deşarj 500-2000 Cycle Charge -Decharge
- -0 C +65 C Sıcaklık Aralığı -0 C +65 C Working Temp.

2000 Cycle | 1. Akım Koruma | 2 Gerçek Garanti

Kurulum Yüksekliği / Installation Height



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Ürün Kodu / Product Code

ACR 60

1,8 Kg | 60 LED | 82 W/h | 16 Wp

Genel Özellikler / General Specifications

Gövde Body	Plastik Enjeksiyon Gövde Plastic Case / Policarbon
LENS LENS	Yüksek Geçirgenlik Polikarbon Policarbon Glass
Çalışma Voltajı Working Voltage	7,4V
Çalışma Sıcaklığı Working Temp.	-0 C +65 C
Gövde Rengi Body Color	Antrasit Grey / Opsiyonel
Renk Sıcaklığı Color Temp.	3000-5500 K
Verimlilik Efficency	1800 Lümen
Ölçüler Dimensions	635x260x70mm

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2 YEARS WARRANTY

CE

Çalışma Özellikleri / Working Specifications

- Harekette Tam Güç / Yarım Güç / Motion full power/DIM mode
- Microdalga Hareket Sensörü / Microwave motion sensor
- 5-8 Saat Şarj Olma / 5-8 Hours Charge Time
- CREE, LG, OSRAM LED

1800 Max Lümen | Ip65 Sızdırmazlık | 12 Saat Çalışma | 2 Gerçek Garanti

Solar Panel Özellikleri / Solar Panel Specifications

- 12V / 16Wp Mono PERC Solar Panel
- 620x250x4mm

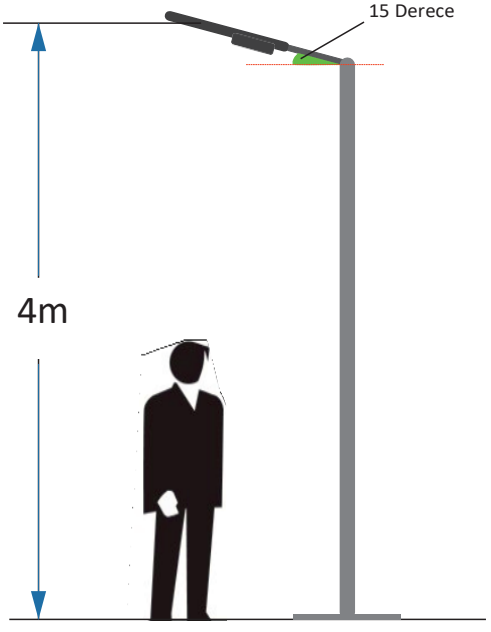
25 Yıl Çalışma Ömrü | 10 Yıl Minimum %90 Verimlilik

Batarya Özellikleri / Battery Specifications

- 7,4V / 11000 mAh Lithium-iyon / LifePo4
- 500-2000 Döngü Şarj - Deşarj 500-2000 Cycle Charge -Decharge
- -0 C +65 C Sıcaklık Aralığı -0 C +65 C Working Temp.

2000 Cycle | 1. Akım Koruma | 2 Gerçek Garanti

Kurulum Yüksekliği / Installation Height



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Ürün Kodu / Product Code **ACR 80**

2,5 Kg | 54 LED | 116 W/h | 28 Wp

Genel Özellikler / General Specifications

Gövde Body	Plastik Enjeksiyon Gövde Plastic Case / Policarbon
LENS LENS	Yüksek Geçirgenlik Polikarbon Policarbon Glass
Çalışma Voltajı Working Voltage	9,6V
Çalışma Sıcaklığı Working Temp.	-0 C +65 C
Gövde Rengi Body Color	Antrasit Grey / Opsiyonel
Renk Sıcaklığı Color Temp.	3000-5500 K
Verimlilik Efficency	2500 Lümen
Ölçüler Dimensions	523X325X75mm

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2 YEARS WARRANTY

CE

Çalışma Özellikleri / Working Specifications

- Harekette Tam Güç / Yarım Güç / Motion full power/DIM mode
- Microdalga Hareket Sensörü / Microwave motion sensor
- 5-8 Saat Şarj Olma / 5-8 Hours Charge Time
- CREE, LG, OSRAM LED

2500 Max Lümen | Ip65 Sızdırmazlık | 12 Saat Çalışma | 2 Gerçek Garanti

Solar Panel Özellikleri / Solar Panel Specifications

- 15V / 28Wp Mono PERC Solar Panel
- 513X314X4mm

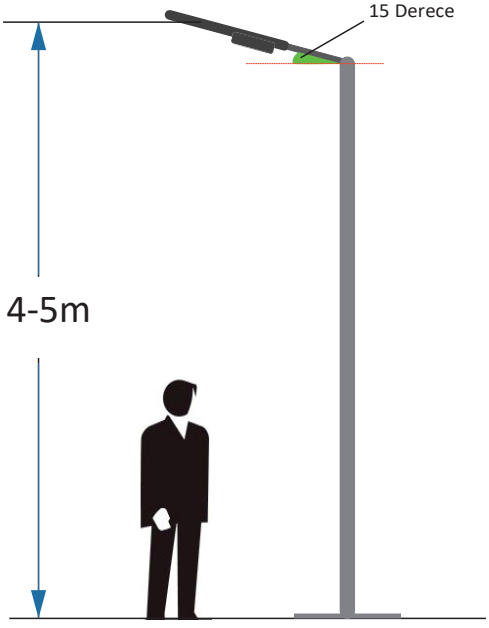
25 Yıl Çalışma Ömrü | 10 Yıl Minimum %90 Verimlilik

Batarya Özellikleri / Battery Specifications

- 9,6V / 12000 mAh / LifePo4
- 2000 Döngü Şarj - Deşarj 2000 Cycle Charge -Decharge
- -0 C +65 C Sıcaklık Aralığı -0 C +65 C Working Temp.

2000 Cycle | 1. Akım Koruma | 2 Gerçek Garanti

Kurulum Yüksekliği / Installation Height



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Ürün Kodu / Product Code — ACR 100

3 Kg | 84 LED | 173 W/h | 45 Wp

Genel Özellikler / General Specifications

Gövde Body	Plastik Enjeksiyon Gövde Plastic Case / Policarbon
LENS LENS	Yüksek Geçirgenlik Polikarbon Policarbon Glass
Çalışma Voltajı Working Voltage	9,6V
Çalışma Sıcaklığı Working Temp.	-0 C +65 C
Gövde Rengi Body Color	Antrasit Grey / Opsiyonel
Renk Sıcaklığı Color Temp.	3000-5500 K
Verimlilik Efficency	3000 Lümen
Ölçüler Dimensions	730X430X75mm

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2 YEARS WARRANTY

CE

Çalışma Özellikleri / Working Specifications

- Harekette Tam Güç / Yarım Güç / Motion full power/DIM mode
- Microdalga Hareket Sensörü / Microwave motion sensor
- 5-8 Saat Şarj Olma / 5-8 Hours Charge Time
- CREE, LG, OSRAM LED

3000 Max Lümen | Ip65 Sızdırmazlık | 12 Saat Çalışma | 2 Gerçek Garanti

Solar Panel Özellikleri / Solar Panel Specifications

- 12V / 45Wp Mono PERC Solar Panel
- 720X420X4mm

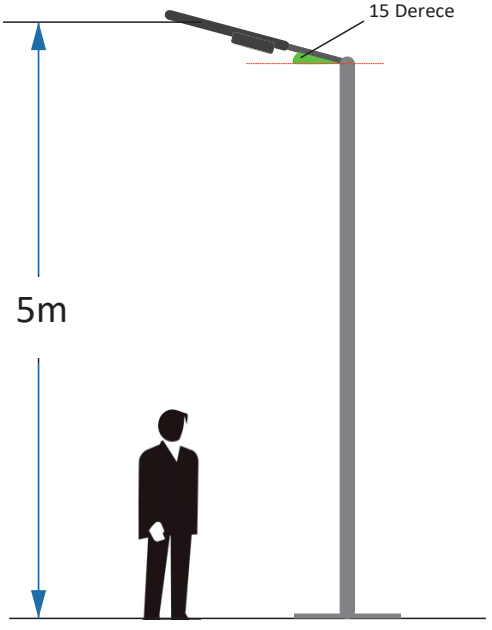
25 Yıl Çalışma Ömrü | 10 Yıl Minimum %90 Verimlilik

Batarya Özellikleri / Battery Specifications

- 9,6V / 18000 mAh / LifePo4
- 2000 Döngü Şarj - Deşarj 2000 Cycle Charge -Decharge
- -0 C +65 C Sıcaklık Aralığı -0 C +65 C Working Temp.

2000 Cycle | 1. Akım Koruma | 2 Gerçek Garanti

Kurulum Yüksekliği / Installation Height



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Ürün Kodu / Product Code — ACR 120

3,5 Kg | 168 LED | 173 W/h | 45 Wp

Genel Özellikler / General Specifications

Gövde Body	Plastik Enjeksiyon Gövde Plastic Case / Policarbon
LENS LENS	Yüksek Geçirgenlik Polikarbon Policarbon Glass
Çalışma Voltajı Working Voltage	9,6V
Çalışma Sıcaklığı Working Temp.	-0 C +65 C
Gövde Rengi Body Color	Antrasit Grey / Opsiyonel
Renk Sıcaklığı Color Temp.	3000-5500 K
Verimlilik Efficency	6000 Lümen
Ölçüler Dimensions	730X430X75mm

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2 YEARS WARRANTY

CE

Çalışma Özellikleri / Working Specifications

- Harekette Tam Güç / Yarım Güç / Motion full power/DIM mode
- Microdalga Hareket Sensörü / Microwave motion sensor
- 5-8 Saat Şarj Olma / 5-8 Hours Charge Time
- CREE, LG, OSRAM LED

6000 Max Lümen | Ip65 Sızdırmazlık | 12 Saat Çalışma | 2 Gerçek Garanti

Solar Panel Özellikleri / Solar Panel Specifications

- 12V / 45Wp Mono PERC Solar Panel
- 720X420X4mm

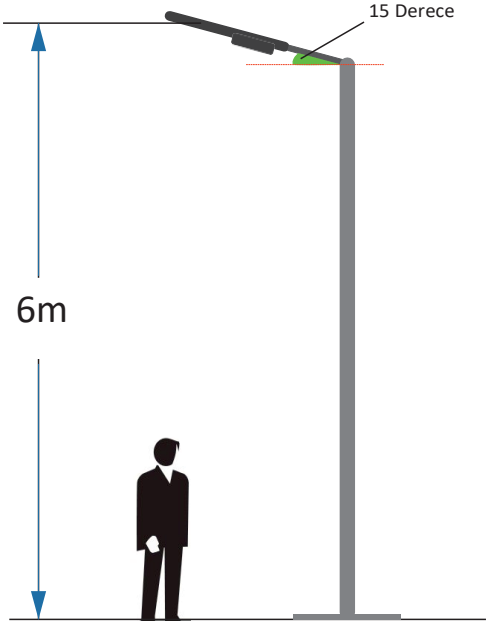
25 Yıl Çalışma Ömrü | 10 Yıl Minimum %90 Verimlilik

Batarya Özellikleri / Battery Specifications

- 9,6V / 18000 mAh / LifePo4
- 2000 Döngü Şarj - Deşarj 2000 Cycle Charge -Decharge
- -0 C +65 C Sıcaklık Aralığı -0 C +65 C Working Temp.

2000 Cycle | 1. Akım Koruma | 2 Gerçek Garanti

Kurulum Yüksekliği / Installation Height



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