LUCIA
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CYCLE PULSE™

Smart LiDAR Traffic Counter

Multi-Modal Detection System for Cyclists, E-Scooters & Pedestrians

Professional Mobility Analytics
for Sustainable Urban Planning



We see you!

WHAT IS CYCLE PULSE?

Cycle Pulse is a next-generation LiDAR traffic counting system that accurately detects and classifies cyclists, e-scooter riders, and pedestrians with >95% accuracy. The system requires no road excavation and includes a professional EN12966-certified LED display with cloud analytics platform at no extra cost.

Unlike traditional inductive loops, Cycle Pulse offers true multi-modal detection with professional-grade reliability and minimal installation disruption.

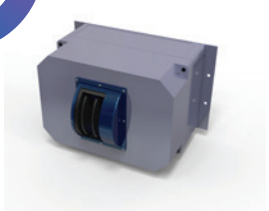
KEY BENEFITS FOR MUNICIPALITIES

- **Multi-Modal Detection: Simultaneously counts cyclists, e-scooter riders, and pedestrians with a single system-impossible with traditional inductive loops**
- **Fast-Track Deployment: Zero-excavation installation means no road closure permits, no asphalt cutting, and 100% system mobility if you need to relocate it. Complete setup in 2-4 hours**
- **Lower Total Cost of Ownership: 70% lower maintenance vs. inductive loops, no recalibration needed, 10+ year design life**
- **All Bicycle Types Detected: Works with carbon fiber, aluminum, steel-no metal detection required**
- **Complete Analytics Platform: First year included with hardware purchase. Low-cost annual subscription (approx. €150) applies thereafter for cloud maintenance and API access**
- **EU Grant Compatible: Provides all required data points for Horizon Europe, CEF Transport, ERDF, and LIFE Programme applications**









WHY LIDAR TECHNOLOGY?

Cycle Pulse uses advanced LiDAR (Light Detection and Ranging) technology instead of traditional inductive loops. This fundamental difference provides significant advantages:

TECHNOLOGY COMPARISON: LIDAR VS. INDUCTIVE LOOPS

Feature	Cycle Pulse (LiDAR)	Inductive Loops
Detection Method	Laser scanning (optical)	Metal detection only
Installation	Side-mount, 2-4 hours	Road excavation, 1-2 days
Road Closure Required	✗ No	✓ Yes
All Bicycle Types	>95% accuracy	70-85% (metal bikes only)
Carbon Fiber Bikes	✓ Detects reliably	✗ Cannot detect
E-Scooters	✓ Classified separately	✗ Cannot detect
Pedestrians	✓ Classified separately	✗ Cannot detect
Weather Impact	None	Temperature sensitive
Maintenance	Minimal (cleaning only)	Frequent (road repairs)
Design Life	10+ years	5-7 years
Total Cost of Ownership	70% lower over 5 years	Higher (baseline)

Key Advantage: LiDAR provides complete multi-modal detection with minimal installation disruption and significantly lower long-term costs.

SYSTEM COMPONENTS

CP-1800 DISPLAY UNIT

Professional public display that makes cycling visible and encourages active mobility:

- Large LED Display: 1800 × 650mm, EN12966 certified
- Real-time Counts: Daily and annual totals clearly visible
- Municipal Branding: Custom logo area included
- Robust Design: IP65, -20°C to +50°C, aluminum housing
- Smart Features: Auto brightness adjustment, 4G + Ethernet connectivity
- Anti-Vandal Design: Reinforced construction

Studies show public displays increase cycling by 12-18%

LVS 2001 LIDAR SENSOR

Advanced laser detection system-the intelligence behind accurate counting:

- Technology: Infrared laser (905nm), Class 1 eye-safe
- Coverage: 96° scanning width, 274 measurement points per scan
- Detection: Cyclists, e-scooters, pedestrians (classified separately)
- Accuracy: >95% in all weather conditions
- Range: Up to 30m (optimal 2.5-4m installation height)
- Installation: Side-mounted, no excavation required
- Power Efficiency: Only 6W average consumption

CITY CONTROL CENTER PLATFORM (INCLUDED)

Professional cloud analytics platform-turn raw data into actionable insights:

- Real-time Monitoring: Track all installations simultaneously
- Interactive Maps: Geographic visualization of traffic data
- Automated Reports: Generate EU grant-compliant traffic reports instantly
- Trend Analysis: Daily, weekly, and seasonal patterns
- Data Export: CSV, Excel, PDF formats
- API Access: Integration with smart city platforms
- Multi-User Access: Role-based permissions





TECHNICAL SPECIFICATIONS

DISPLAY UNIT (CP-1800)

Specification	Value
Dimensions	1800 × 650 × 150 mm
Weight	~45 kg
Protection Rating	IP65 (-20°C to + 50°C)
Power Supply	230V AC, ~80W max
Display Type	LED matrix + 7-segment
Certification	EN12966 professional grade
Connectivity	Ethernet + 4G modem

LIDAR SENSOR (LVS 2001)

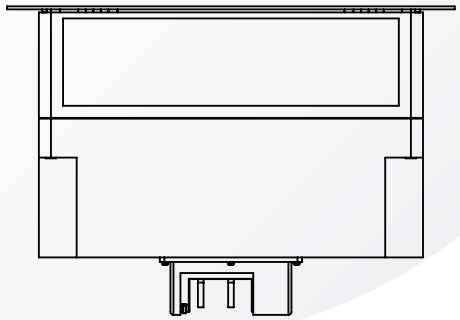
Specification	Value
Technology	LiDAR (905nm infrared)
Laser Safety Class	Class 1 (eye-safe)
Scanning Coverage	96° width, 274 measurement points
Detection Range	Up to 30m (optimal 2.5-4m)
Accuracy	**>95%**
Protection Rating	IP65
Power Consumption	12/24V DC, 6W average
Scanning Frequency	16 ms (62.5 Hz)

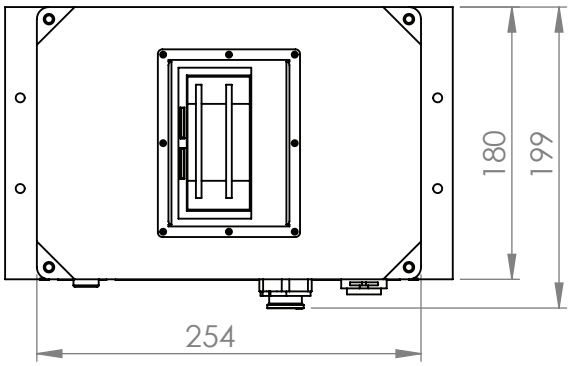
LOGISTICS INFORMATION

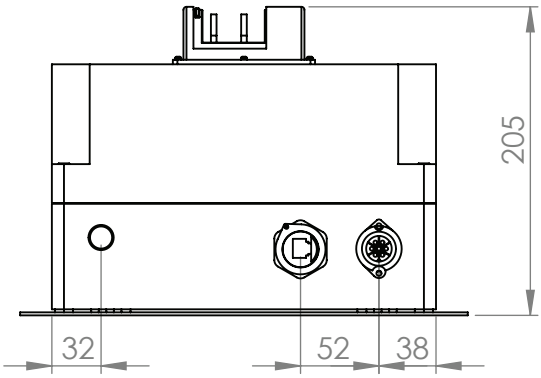
Complete system specifications for shipping and transport planning:

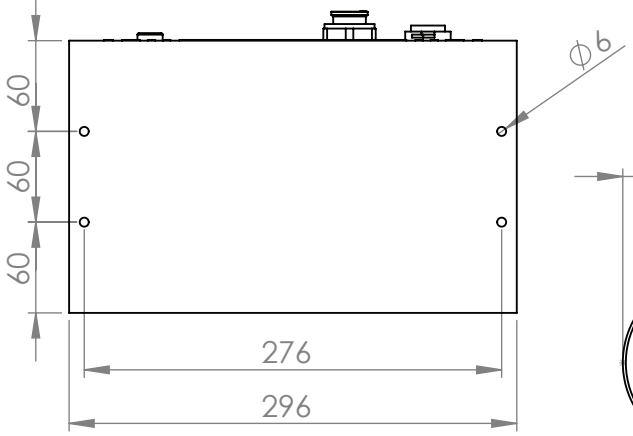
Item	Specification
Display Unit Dimensions	1800 × 650 × 150 mm
Display Unit Weight	~45 kg
LiDAR Sensor Dimensions	325 × 325 × 173 mm
LiDAR Sensor Weight	~8 kg
Total System Weight	**~53 kg (without hybrid battery)**
Hybrid Battery Package (optional)	+15 kg additional
Shipping Package Dimensions	1900 × 750 × 300 mm
Shipping Weight (with packaging)	~65 kg

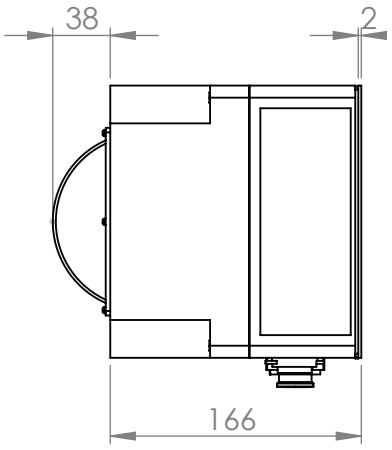
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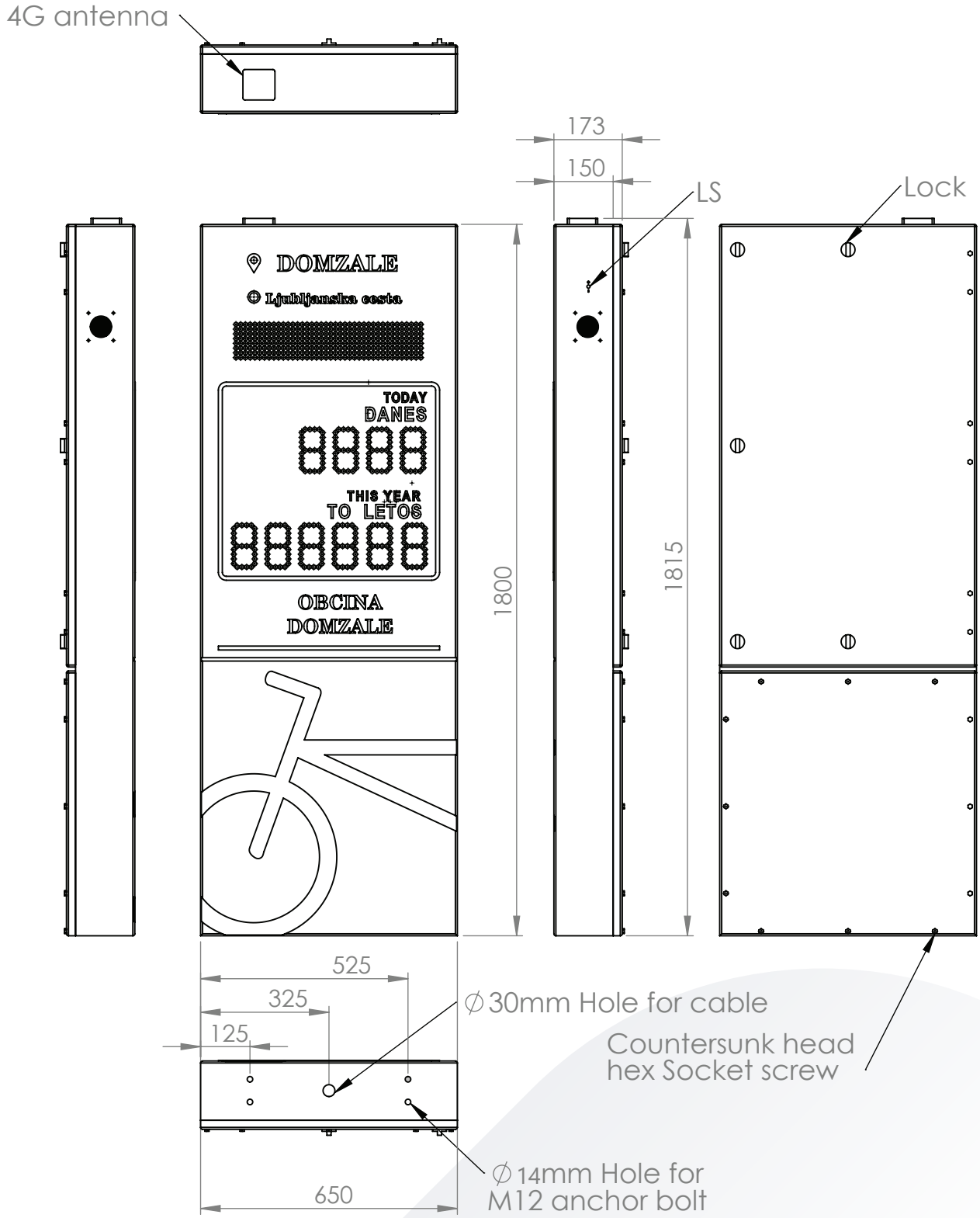











4G antenna
173
150
LS
Lock
DOMZALE
Ljubljanska cesta
TODAY
DANES
8888
THIS YEAR
TO LETOS
888888
OBCINA
DOMZALE
1800
1815
525
325
125
650
∅30mm Hole for cable
Countersunk head
hex Socket screw
∅14mm Hole for
M12 anchor bolt

EU GRANT APPLICATIONS

Cycle Pulse provides comprehensive traffic data required for major EU funding programs:

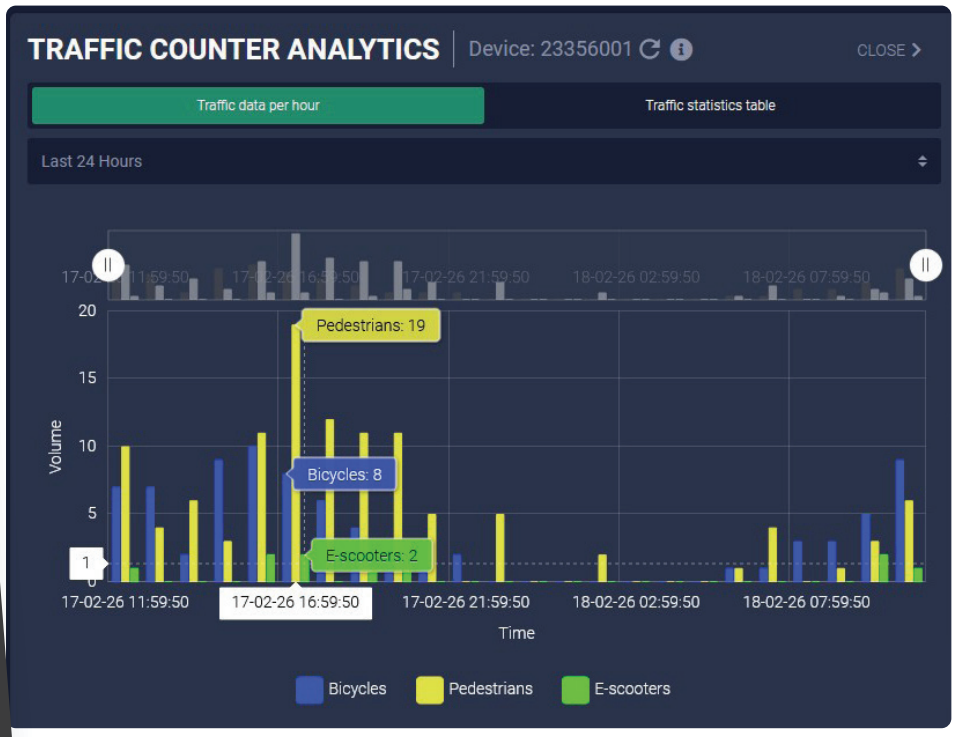
SUPPORTED PROGRAMS

- Horizon Europe (Sustainable Urban Mobility)
- CEF Transport (Cycling TEN-T)
- ERDF (European Regional Development Fund)
- LIFE Programme (Climate Action)

DATA POINTS PROVIDED

- Traffic volume (daily/monthly/annual totals)
- Peak usage patterns and hourly distribution
- Seasonal variations and trends
- Modal split analysis (cyclists/e-scooters/pedestrians)
- Growth trends and projections
- Before/after comparisons for infrastructure improvements

TRAFFIC COUNTER ANALYTICS



COMPLIANCE & CERTIFICATIONS

- CE Marking-European market certified
- EN12966-Urban equipment display standard
- EN-60825-1 : 2015-Laser safety certification
- EMC 2014/30/EU-Electromagnetic compatibility
- LVD 2014/35/EU-Low voltage directive
- GDPR Compliant-No personal data collected (privacy-safe)
- WEEE & RoHS-Environmental standards compliance

OPTIONAL ADD-ON: HYBRID POWER PACKAGE

Ensure uninterrupted operation anywhere-perfect for remote locations or areas with unreliable power grids.

PACKAGE INCLUDES

Component	Specification
Battery	LiFePO4 100Ah @ 12V
Charge Source	Street lighting 230V AC
Backup Duration	**Up to 7 days**
Lifecycle	>3,000 cycles (8-10 years)
Protection	IP65, BMS included

KEY BENEFITS

- Uses existing street lighting infrastructure-no additional wiring needed
- Continuous operation during power outages
- Automatic grid/battery switching
- Remote battery monitoring via cloud platform
- Safe LiFePO4 chemistry (no fire risk, wide temperature range)



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Business Hours:

Monday-Friday,
08:00-16:00 CET

Support Services

- Email Support: 24-hour response time
- Phone Support: Direct engineering assistance
- Remote Diagnostics: Via cloud platform
- Platform Uptime: 99.5% SLA
- Standard Warranty: 12 months from installation

Next Steps

Request Information:

- Site assessment and consultation
- Detailed technical specifications
- Custom quotation for your project
- EU grant funding consultation
- Pilot installation evaluation (3-month trial)