



LYNRED releases first open-source multispectral dataset in Europe for safer mobility and other thermal imaging, AI-based applications

A game-changing public resource including 250,000+ thermal images for growing needs in safer automotive, smart city and robotics applications

Grenoble, France – June 2, 2025

LYNRED, a global leader in thermal infrared imaging technologies, has unveiled the first open, large-scale European dataset dedicated to Automotive industry and ADAS (Advanced Driver Assistance Systems) and other AI-based applications. The LYNRED Mobility Dataset, unique in its kind, includes over 250,000 thermal images, providing AI researchers with an unprecedented resource to train and benchmark perception systems for real-world mobility applications and more.

An unmatched foundation for AI training and testing

Captured over several years and seasons using a mix of thermal and visible-spectrum cameras, the LYNRED Mobility Dataset offers a highly diverse and realistic set of road scenarios. It is designed to help AI models learn to detect and react to the full complexity of traffic environments — from pedestrians crossing snowy rural roads to vehicles navigating urban night scenes.

The dataset is divided into three parts:

- **Multimodal Detection:** 80,000+ annotations across 9 categories of road users — including pedestrians, cyclists, motorcycles, cars, trucks, buses, animals, trains and construction machinery – on aligned thermal and visible spectrum frames.
- **Stereovision Sequences:** Video clips from 4 time-synchronized cameras (2 visible + 2 thermal), enabling depth perception and 3D scene reconstruction.
- **Range Estimation:** [Pedestrian detection](#) at distances up to 250 meters, across 12 use-case scenarios aligned with current PAEB (Pedestrian Automatic Emergency Braking) standards, including bicycle scenarios.

This resource also includes one of the largest collections of thermal images ever released, at a time when thermal imaging sensing is gaining traction as a vital component for ADAS — especially for night driving and poor visibility conditions.

Free, public, and ready to power the next generation of mobility

By providing the LYNRED Mobility Dataset free of charge, LYNRED aims to remove one of the key barriers to innovation in the field: access to high-quality, annotated thermal imaging data. It empowers professionals to train, evaluate and compare the performance of perception algorithms in a rigorous, objective and repeatable way.

Beyond automotive safety, the LYNRED Mobility Dataset lays the groundwork for a broader range of vision-based applications:

- Smart cities: real-time traffic flow analysis, adaptive lighting, and dynamic signage
- Automotive: sensor fusion for improved detection, all-weather ADAS performance, autonomous navigation
- Robotics: enhanced SLAM (Simultaneous Localization and Mapping), object detection and segmentation using multimodal inputs
- And even more applications beyond the scope of Automotive, Transports and Mobility

Driving Europe's edge in AI and thermal mobility solutions

This initiative responds to growing demand from LYNRED's partners to accelerate testing and generate proofs-of-concept in the automotive sector. By setting a new benchmark for dataset quality and accessibility, LYNRED positions itself as a key enabler of thermal imaging-powered AI innovation across mobility and public safety domains.

"This dataset is more than just a huge collection of images — it's a strategic resource for the future of safe and intelligent mobility and AI-based infrared applications," says Hervé Bouaziz, Executive President of LYNRED. "We're proud to provide the industry with a tool that can help save lives, spur research, and drive Europe's leadership in computer vision and autonomous systems."

LYNRED would like to thank CHIPS JU, BRIGHTER project, DeepRed Research Chair, and Neovision for their contribution to this dataset.

[Access the dataset](#) to learn more.

About LYNRED

LYNRED, alongside its subsidiaries LYNRED USA, LYNRED Asia-Pacific and New Imaging Technologies, is a global leader in designing and manufacturing high quality infrared technologies for aerospace, defense and commercial markets. It has a vast portfolio of infrared sensors that covers the entire electromagnetic spectrum from near to very far infrared. Its products are at the center of multiple military programs and applications and are key components in many top brands in commercial thermal imaging equipment sold across Europe, Asia and North America. Lynred is the leading European manufacturer for IR detectors deployed in space.

www.lynred.com

Press contacts

Virginie Raison - Oxygen

+33 6 65 27 33 52

virginie@oxygen-rp.com