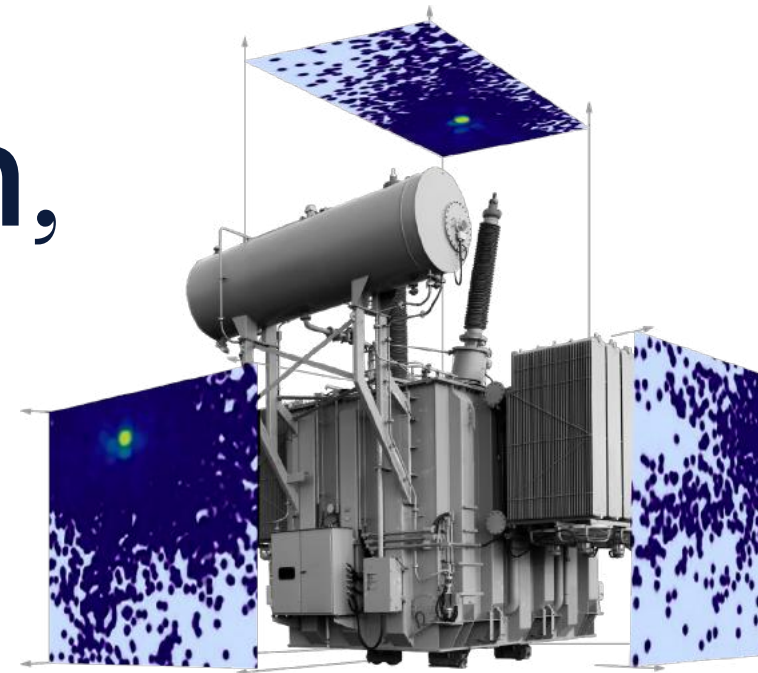




OPTIFENDER® 

**Fast PD localization,
maximized lifetime
extension.**

The world's first passive fiber
optic PD monitoring system





Why Partial Discharge Monitoring?

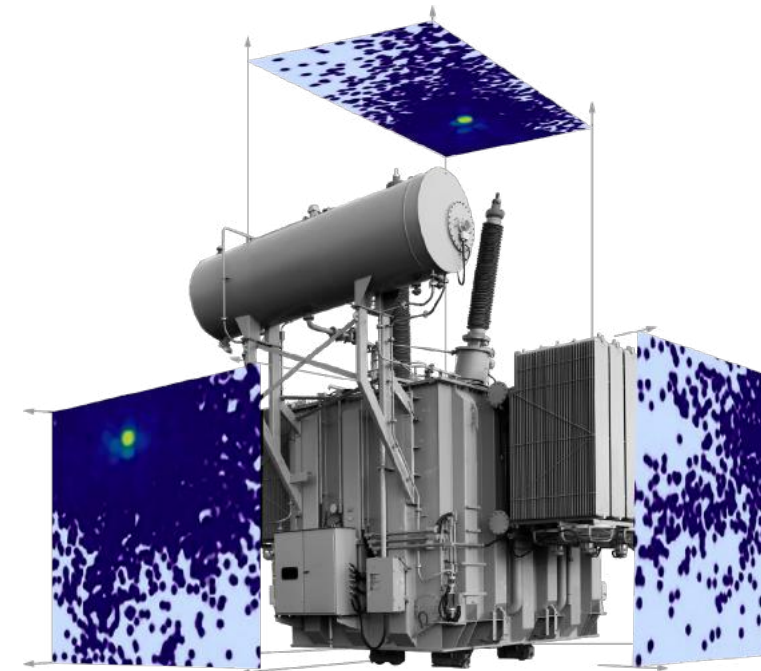
Partial discharge (PD) is one of the leading root causes of **insulation failure** in high voltage assets, **often remaining invisible until catastrophic breakdown.**

Online PD monitoring with OptiFender empowers asset owners to switch from schedule based to **condition based maintenance, minimizing unplanned outages.**



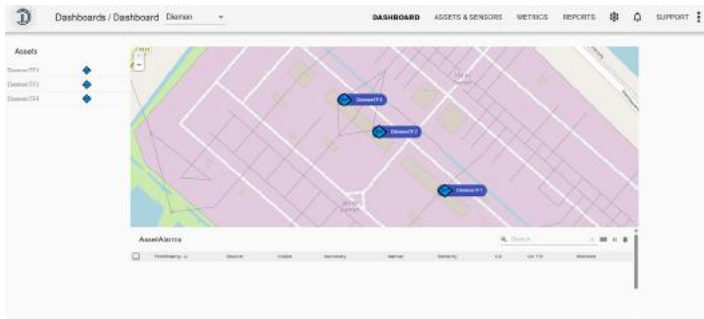
The OptiFender PD Monitoring Solution at a Glance.

1. **Fast, non-invasive setup** – One universal, clip-on fiber sensor works on any high-voltage asset, with no precise positioning or specialist skills required.
2. **True 24/7 intelligence** – The system streams continuously, filters out noise, and alerts you only when a genuine partial-discharge event is verified—so you see insights, not false alarms.
3. **Secure, scalable delivery** – View results in Optics11's SaaS dashboard or deploy the software on-prem / in your preferred data center to match any security policy, then expand effortlessly as you add assets.



How It Works.

OPTIFENDER® 
Asset Monitoring Platform



1. Completely **passive**, **EMI immune** fiber optic sensors **detect acoustic PD pulses** directly **on the asset surface**.
2. An intelligent edge gateway **tags and classifies events**, streaming **only proven PD alarms** to operators **24/7**.
3. The **Optifender SaaS platform scales** securely from **one transformer** to an **entire asset fleet**, e.g. to monitor an entire substation.



O11 - OptiFender
O11 - Software Suite

19" Rack



Optical Fiber MTP-8 50m - 2km



Connection Box



O11 PD Sensor - Non Metallic
O11 Mounting Bracket

Acoustic Gel / Grease / Glue

Cablebinder



OPTIFENDER® PD Localization

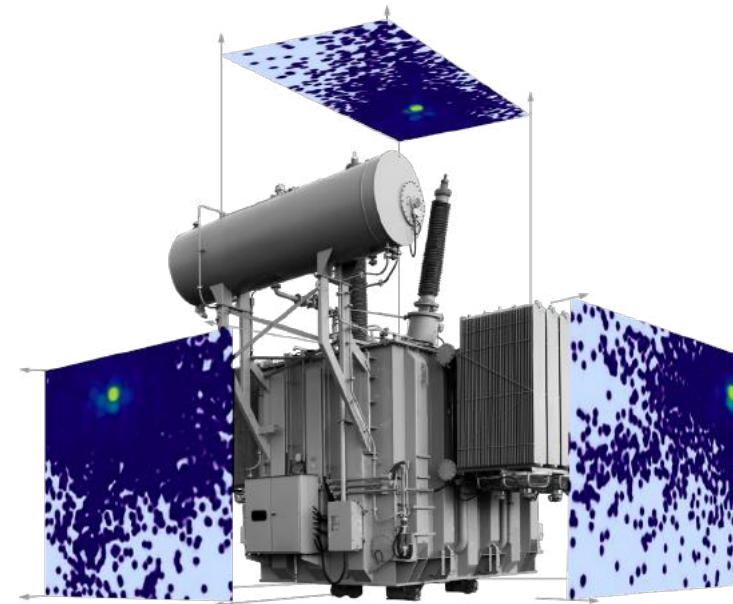
OptiFender pinpoints the problem, live and in 3-D.

The system **automatically localises partial-discharge sources to within 15 cm** on energised cables or identifies the exact joint or winding in transformers and GIS.

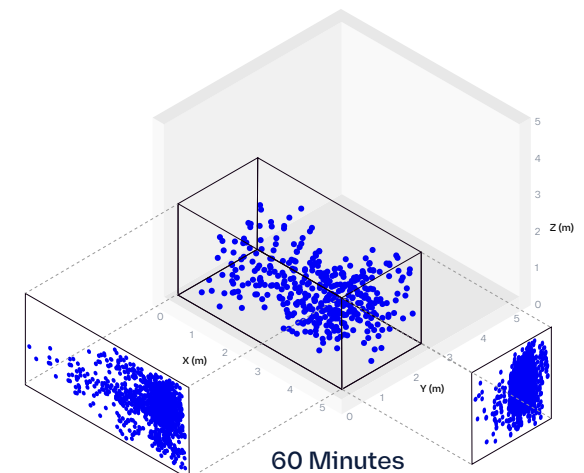
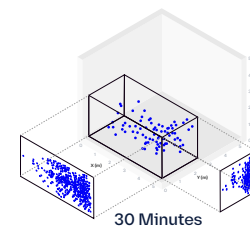
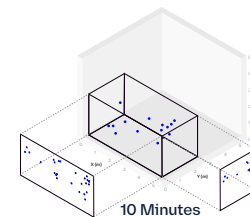
Real-time PRPD patterning and built-in ML classification turn those coordinates into clear, **risk-ranked actions, no on-site PD specialist or shut-down required.**

Maintenance teams can therefore dispatch the right crew to the right spot, **cut diagnostic times drastically**, and extend asset life through targeted, condition-based repairs.

OptiFender keeps critical power assets online, reliable and efficient.



3D Localization



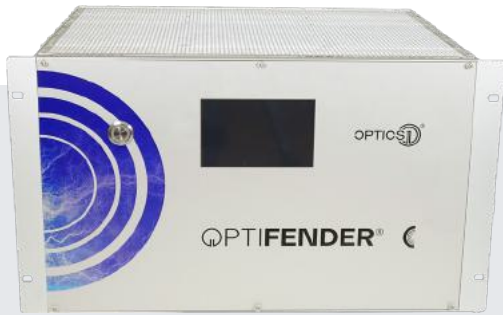
OPTIFENDER vs. Electric PD Monitoring

Compared to traditional electric systems, OptiFender offers enhanced performance and reliability. Its revolutionary technology can measure internal Partial Discharge (PD) down to 5 pC, allowing detection of even the slightest indications of PD.

	Fiber Optic PD Monitoring with OptiFender	Electrical PD Monitoring
Immunity to EMI	✓ High (immune to electromagnetic interference)	× Low (susceptible to electromagnetic interference)
Signal Clarity	✓ Excellent in any environment	× May be compromised in complex environments
Measurement Consistency	✓ High consistency and reliability	× May vary due to interference or environmental factors
Installation	✓ Easy, without interrupting operations	× Can be complex, may require shutdown of operations
Power Requirement	✓ No power required at the sensing location	× External power source or pre-amplifiers often required
Isolation	✓ Features galvanically isolated sensors	× Less galvanic isolation, potential safety risk
Durability	✓ High durability, suitable for harsh environments	× Might have limited durability in harsh environments



OPTIFENDER® Hardware Innovations & Certifications



OPTIFENDER®
Interrogation Unit
32 Channel

IP68 / NEMA6P

OptiFender's fiber optic sensors are certified to meet the robust NEMA 6P and IP68 standards, ensuring unparalleled protection against dust, prolonged submersion, and other environmental challenges. This certification guarantees the sensors' reliability and durability in the most demanding conditions.

OPTIFENDER®
Connection Box

Standard
Optical Fiber
Cables



OPTIFENDER®
PD Sensor
P6300-40 Non Metallic



Sensor
P6300-40 Non Metallic

Features

- Modular acquisition unit
- Special watertight fiber optic PD sensors
- magnetic clamp
- Extra sensitive
- multi core
- Non-metallic, galvanically isolated sensors

Ready to hear
what your assets
are saying?

Book a live demo
or request a
quote today.



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