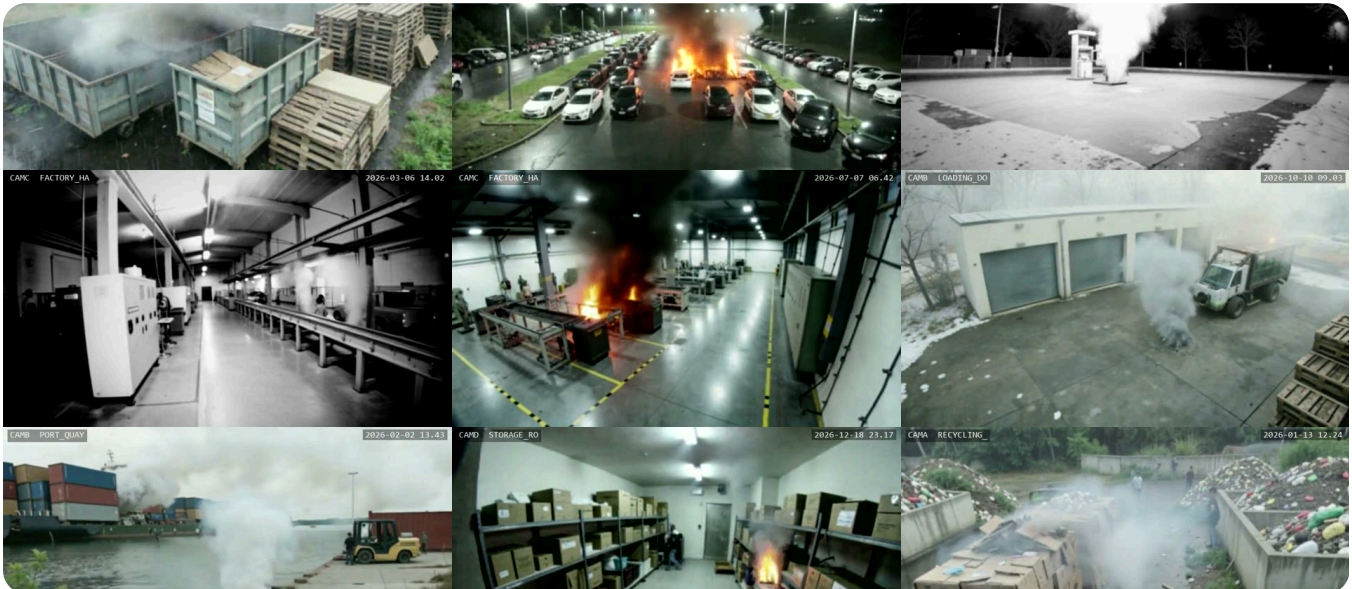


Synthetic CCTV Fire & Smoke Video Dataset

Fixed-camera surveillance footage of early fires, smouldering smoke and the steam and fog that trigger false alarms. Built to train and test video fire and smoke detectors where real footage is rare.



1,000

video clips, 15 s each

~16k

annotated frames (1 per second)

16

industrial & commercial site types

3

box classes: fire, smoke, steam/fog

What's inside

Video	MP4, 896×512, 8 fps, 15 s (121 frames)
Events	flaming, fuel and electrical fires (~32%), smouldering smoke (~50%), steam and fog look-alikes (~18%)
Lighting	day (~55%), colour night (~20%), monochrome infrared night (~25%)
Weather	clear, overcast, rain, fog, snow; four seasons
Camera	wide / normal / tele field of view; event near, mid or far from camera
Formats	COCO JSON, YOLO TXT, per-clip metadata (JSONL)
Splits	train / val / test by scene, so variants of one scene never leak across splits

Why it is different

- **Starts before the fire.** Train and measure time-to-detect, not just late-stage blazes.
- **Labelled false alarms.** Steam and fog have their own box class.
- **Infrared night.** Real CCTV goes monochrome at night; most fire datasets don't.
- **Outdoor sites without smoke detectors:** ports, motorways, yards, landfills, recycling, fuel stations.
- **Clean commercial license.** No real people, no personal data, no GDPR exposure.

Site types

Container port, quay, motorway, facility gate, parking lot, fuel station, warehouse yard, landfill, recycling centre, loading dock, factory hall, warehouse racks, storage room, retail stockroom, electrical room, break room.

● How it was made

1. Scene	A still CCTV view generated with FLUX.2 [klein] 4B (Apache 2.0), lens-corrected and degraded to a real surveillance-camera look.
2. Event	Image-to-video with LTX-2.5 and a fluid-simulation LoRA, guided by a painted plan of where and how fast smoke and flames grow. The camera framing is anchored so the view never moves.
3. Camera look	Exposure drift from smoke, flame flicker, compression, sensor noise, infrared night look, burned-in camera label and timestamp.
4. Quality control	Automatic rejection of camera motion, scene cuts and generation artefacts, followed by visual review.
5. Annotation	Boxes from a vision-language model (Qwen3-VL, Apache 2.0) at 1 frame per second. The clip's known class constrains them, and they are spot-checked by a human.

● Recommended use

Combine with real data to fine-tune or augment a detector. Use it to stress-test robustness to night, infrared, weather and false-alarm triggers. Validate on footage from your own cameras.

● Known limitations

- Synthetic domain: close to real cameras but not identical; expect a domain gap.
- Model-generated boxes are looser than hand-drawn ones, especially for thin haze and smoke filling the frame.
- Boxes every 8th frame, not every frame.
- Rare generation artefacts may remain; reported clips are replaced for 12 months.
- Not a substitute for EN 54 / UL certification testing.

● Metadata per clip

video, split, scene_id, scene, indoor, condition, nightmode, weather, season, fov, distance, event, class, intensity, first_flame_frame, fps, length

● Licensing & pricing

Non-exclusive, perpetual, unlimited internal users, trained models usable commercially	€9,900
Exclusive in your field for 24 months	from €29,000
Custom generation for your sites, camera angles and events (min. 100 clips)	from €40 / clip
Evaluation sample: 20 clips with annotations	free