kuva
GAS CLOUD IMAGING

GCI360

Continuous Gas Cloud Imaging System

- No false positives
- A fraction of the price of other gas imaging systems
- Site survey frequency: 20-180 complete surveys per hour

AICPA SOC aicpa.org/soc4so

ISN ISNetworld® RAVS PLUS PARTICIPANT

The Kuva GCI360 continuous optical gas imaging (OGI) system is an industry leader in continuous emissions monitoring, with autonomous daylight operation and zero false positives. The multiband shortwave infrared (SWIR) sensor, ruggedized RGB optics and IP65 enclosure ensure visibility of customer infrastructure to monitor for intended or unintended emissions.

OIL AND GAS OPERATORS USE KUVA CAMERAS TO MONITOR:

- Production tanks
- Flares
- VRU's
- Compressors
- Separators
- Releases from thief hatches
- Overpressure events
- Leaking valves

SO THEY CAN:

- Optimize production operations
- Correlate with SCADA data for root cause determination
- Populate emission reports
- Find and fix leaks quickly; especially super emitters

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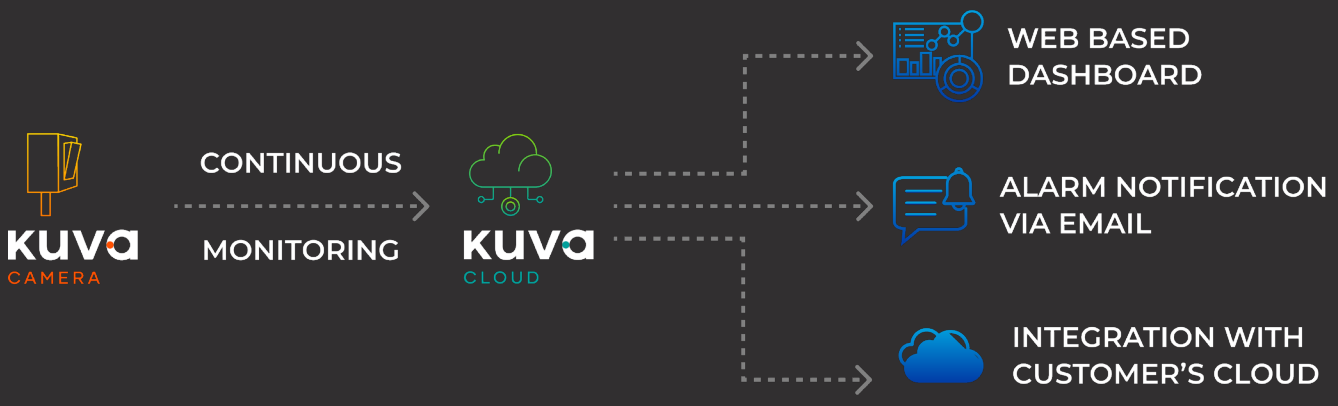
The camera is only designed for installation in non-classified areas as per API 500/505.



Product Features

- Multiple 46-degree points-of-interest (PoI)
- Freely selectable location of PoI zones within 360 degrees
- Configurable notification engine to avoid alarm exhaustion
- Online portal for control and notification
- Integration via API, EventHub, MQTT Sparkplug B
- Image history timeline
- Event history timeline
- Site mapping and camera management
- Edge processing on embedded Linux computer
- Integrated 5MP color RGB camera

Camera/Optics

Primary IR Sensor	Multiband shortwave IR (SWIR)
Secondary Color Sensor	5MP RGB Color
Single-Image Field-of-View (FoV)	54° (V) x 46° (H)
Points-of-View Configuration	Points of Interest can be contiguous, or isolated

General

Target Gas	Methane, VOCs (C1 - C6+)
Confusers	Does not confuse water vapor with target gases
Networking	4G/LTE or 10/100/1000 MBit/s Ethernet standard (10 Mbps minimum)
Communications	Via site's Ethernet or integrated cell modem
Calibration	Automatic. No manual site-specific calibration required during installation or operation

Environmental

Operating Temperature	-40 °F to 131 °F (-40 °C to 55 °C)
Storage Temperature	-40 °F to 158 °F (-40 °C to 70 °C)
Ingress Protection	IP65
Initialization Process	15 minutes from power-on to fully functional
Maintenance	No regular maintenance. Occasional window cleaning recommended. No site calibration or sensor replacement required.

Mechanical

Weight	25 lbs
Finish	White powder coat
Dimensions (H x W x D)	18" x 17" x 15" (46 cm x 43 cm x 38 cm) +8.5" anemometer +11" camera mount post
Camera Mount	1.57" (40 mm) I.D. pipe w/ U-bolt

Electrical

Supply Voltage	22 Vdc to 32 Vdc
Supply Current	2.5 A, fused at 4 A
Nominal Power	25 W
Peak Power	30 W
Power Supply	Passive Power-over-Ethernet (PoE) via integrated splitter. Optional 802.3bt

Detection Performance

Detection Range	Typical: 16 ft (5 m) to 164 ft (50 m) Ideal: 16 ft (5 m) to 459 ft (150 m)[1]
Wind Requirement for Detection	Wind is not needed to transport emissions to the camera for detection. The camera performs remote imaging from a stand-off distance
90% Probability of Detection[2]	109 SCFH | 74 Sm^3/d | 2.2 kg/h
Minimum Detection Limit[2]	12 SCFH | 8 Sm^3/d | 0.25 kg/h
False Positive Rate[2]	0%
Leak Pinpointing[2]	100% accurate for equipment, 99% accurate for component
Monitoring Frequency[3]	From 20 to 180 site surveys/hr depending on PoI count

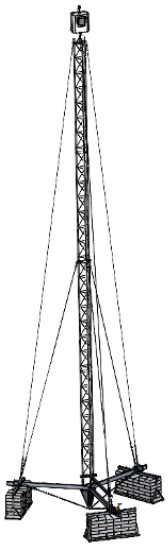
Detection performance values may vary based on specific site and environmental conditions.

[1] Leak rate and weather dependent

[2] Independently validated results by Methane Emission Technology Evaluation Center (METEC) per Advancing Development of Emissions Detection (ADED) continuous monitoring protocol blind testing over a 5-month period in a variety of duration, flow rate, wind speed and solar irradiation. Refer to https://energy.colostate.edu/metec/aded/

[3] Depending on number of FOVs

Mounting Options and Accessories



Kuva Tower

- 40 ft (12.2 m) tall
- Patented ballasted foundation
- Can be installed in less than 2 hours
- No ground penetration required
- Hand winch system to raise tower
- Conforms to TIA 222-h up to 120 mph wind

Utility Pole Mount

- Cap assembly for 3" conduit
- Optional, for camera mounting on wooden poles or metal structures
- Lowest cost option for camera mounting

Alarm Notification Options

- <1 hour alarm notification
- <24 hours alarm notification

Solar Power Option

- Just plug and go
- 24 Vdc system
- Battery backup

Communication Options

- Cellular (integrated)
- Ethernet (via PoE, access at bottom of mounting pole)

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