

LineVu

DATASHEET



Live Stream Video
From Inside Your Pipeline



At a Glance

LineVu provides pipeline visibility with its live, high-resolution, color video streaming camera. LineVu enables proactive monitoring of liquid carryover to boost revenue for processing plants and minimize maintenance costs for transmission system operators.

A WINDOW INTO YOUR PROCESS

The LineVu process camera system proactively monitors for liquid carryover, black powder and other contamination. These have significant financial, safety and compliance impacts for gas system operators. The presence of wet gas has a significant impact on fiscal measurements of calorific value and flow. LineVu has revealed that liquid carryover occurs far more frequently than conventional gas analyzers report. This means that gas processors are losing out on revenue, and gas transmission companies have higher compressor servicing and pigging costs than necessary.



TURNING VIDEO INTO USEFUL DATA

LineVu's cutting edge, high-resolution, full-color video camera is a game-changer for pipeline monitoring, revolutionizing real-time surveillance and analysis. Harnessing the power of advanced image processing, LineVu detects and responds to contamination events, triggering immediate alarms. This system offers a live video feed to local control desks, while simultaneously delivering time-lapse videos and in-depth analysis to remote service and process management engineers through a secure web portal. With LineVu's data at your fingertips, process decisions become clearer, whether optimizing filter replacement and maintenance schedules, or enhancing phase separation efficiency. Furthermore, LineVu effortlessly presents mist levels and stratified flow data in user-friendly formats, facilitating rapid fault diagnosis. LineVu is more than monitoring, it is a new way to validate gas quality.

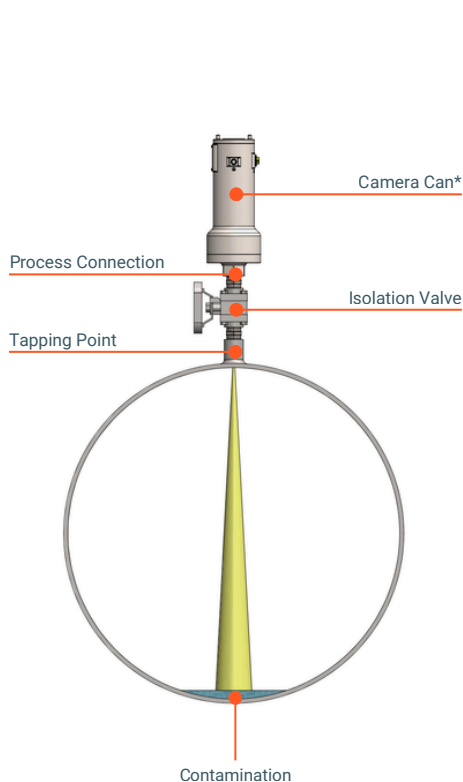


PROCESS CONNECTION OPTIONS

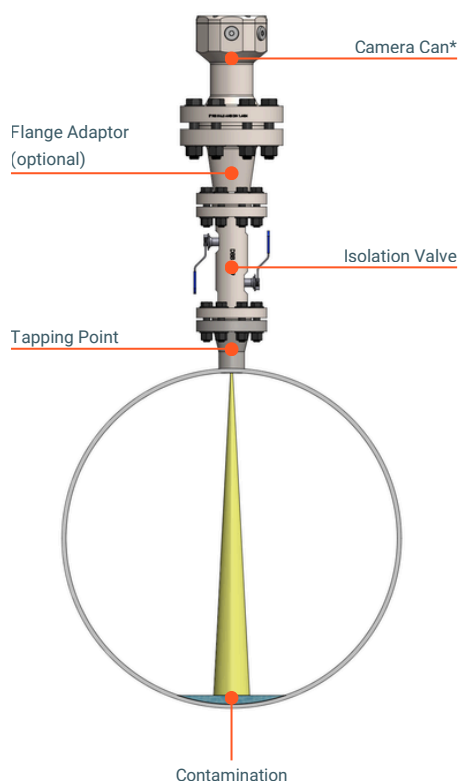
Threaded and Flanged Connections

Different LineVu configurations can be installed depending on the type of tapping point available. Both threaded (1" NPT) and flanged (3" Class 900 RTJ) connections are available as standard. Alternative process flange connections can be facilitated with the use of an optional flange adaptor.

Threaded Process Connection



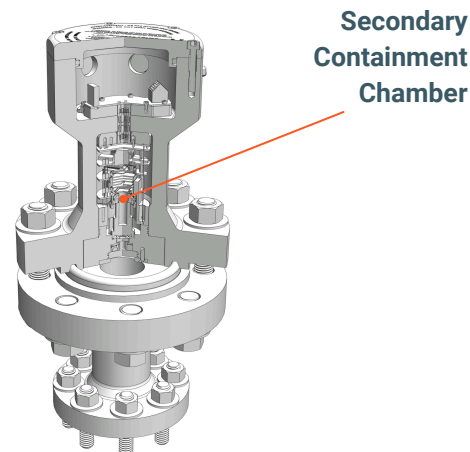
Flanged Process Connection



Operate with Satellite communications via Starlink

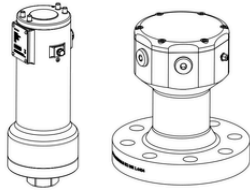
SECONDARY CONTAINMENT

Each LineVu Camera Can has an upper and lower chamber. The lower chamber is a patented secondary containment chamber that can contain full line pressure, giving the system an added layer of safety when connecting to a natural gas pipeline.



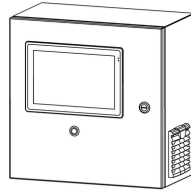
*A brace can be added to reduce stress on small bore connections, please ask for details

PRODUCT RANGE



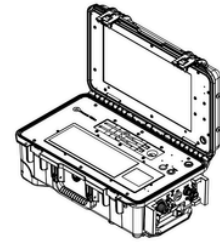
Camera Can

Mounted to the pipeline, the Camera Can captures 24/7 video of the pipeline activity. Available in threaded and flanged process connections.



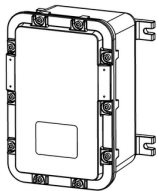
Alert System

Located in a safe area, the Alert System provides a local interface, alarm outputs, and LineVu Portal connectivity for the Camera Can for permanent installations.



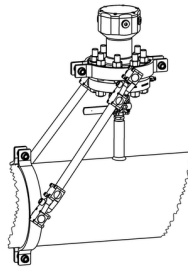
Discovery System

Located in a safe area, the Discovery System provides power and LineVu Portal connectivity for the Camera Can during studies and short-term installations.



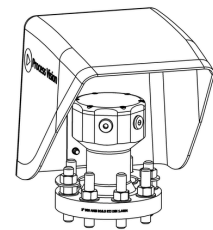
Hazardous Area Media Converters

Located in a Class 1, Div 1 or Zone 1 area, the media converter converts between copper and optical fiber for communication of Ethernet over long distances.



Bracing System

The Bracing System uses clamps to secure the setup and reduce vibration, helping maintain stability and reliable operation.



Sunshade

Provides protection for the Camera Can in areas where direct sunlight may heat metal.

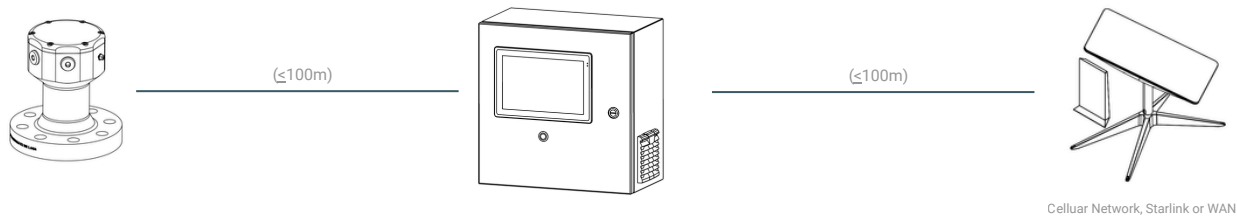
Hazardous area certified for field installation

The camera enclosure is certified for hazardous locations, including UKEX/ATEX/IECEx Zone 1 and UL/CSA Class 1 Div 1, enabling installation at live pipeline tapping points with safe-area controller architecture.

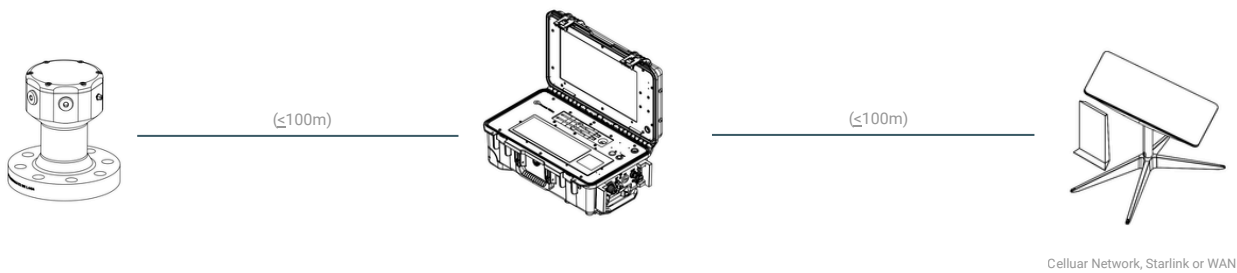


DEPLOYMENT OPTIONS

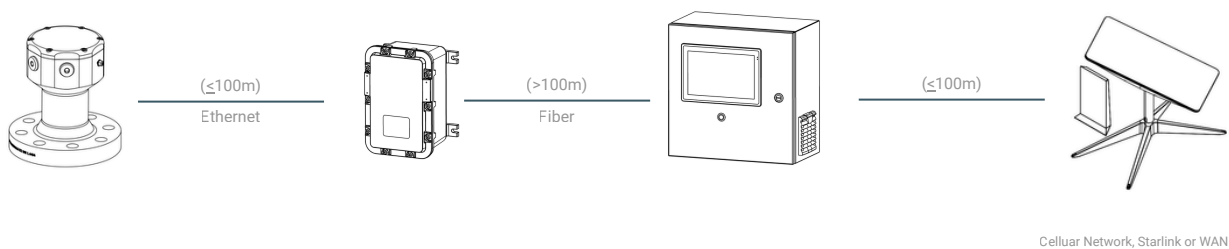
ALERT SYSTEM



DISCOVERY SYSTEM



EXTENDED SYSTEM



Typical configurations shown. Contact us to discuss alternative options.

CAMERA CAN



Threaded



Flanged

Physical

Process Connection	1" NPT (Female)	3" Class 900 RTJ
Weight	Approx. 36.6lbs (16.5kg)	Approx. 64lbs (29kg)
Wetted Materials	316L Stainless Steel, Sapphire and O-Ring (FKM & FKM ENDURA®)	
Dimensions (H x Ø)	13.4 x 5.0"(341 x 127mm)	10.2 x 9.5"(260 x 241mm)
Pressure Rating	1,514 PSIG (104.4 barg)	
Ingress Protection	IP67/NEMA 4X	IP66/NEMA 4X
Ambient Temperature	-4°F to 131°F (-10°C to +55°C), extendable with passive or active thermal management	

Electrical

Connection	POE+ Ethernet (Shielded Cat 5e or greater)	
Port Size	M20	M25 (x 4)
Max Cable Length (to Discovery/Alert)	328ft (100m) - greater when a media converter is fitted	

Imaging

Sensor	1/2.9" CMOS
Resolution	1.6 MP (1440 x 1080 px)
Maximum Frame Rate	77 FPS
Shutter Type / Chroma	Global / Color
Detection Size	0.004" (0.11mm) *at typical working distance on a 24" pipe

Approvals

ATEX/UKEX/IECEX		II 2 G Ex db IIB+H ₂ T5 Gb Tamb = -50°C to +65°C (30W Max)	II 2 G Ex db IIB+H ₂ T4 Gb Tamb = -40°C to +60°C (30W Max)
UL/CSA		Class 1, Div 1 Groups B, C&D T5 Class 1, Zone 1 AEx db IIB + H ₂ T5 Gb	Class 1, Div 1 Groups B, C&D T4 Class 1, Zone 1 AEx db IIB + H ₂ T4 Gb
Other		CRN (Canadian Registration Number)	-

LineVu DISCOVERY



Physical

Dimensions (H x W x D)	8.94 x 22.83 x 13.86" (227 x 580 x 352mm)
Weight	31.08lbs (14.1kg)
Ambient Temperature	50°F to 86°F (10°C to 30°C)
Mounting	Portable (Freestanding)

Electrical

Power	100-240VAC 50/60Hz (Max. 60W)
Max Cable Length (to Camera Can)	328ft (100m) - greater when a media converter is fitted

Approvals

Safe Area Use Only

LineVu ALERT



Physical

Dimensions (H x W x D)	16.22 x 16.85 x 8.98" (412 x 428 x 228mm)
Weight	34.17lbs (15.5 kg)
Ambient Temperature	50°F to 86°F (10°C to 30°C)
Mounting	Wall Mounted

Electrical

Power	24VDC (Max 150W)
Max Cable Length (to Camera Can)	328ft (100m) - greater when a media converter is fitted
Data Storage	Up to 2 months (expandable via a 2.5" drive)

Approvals

Safe Area Use Only

Communications

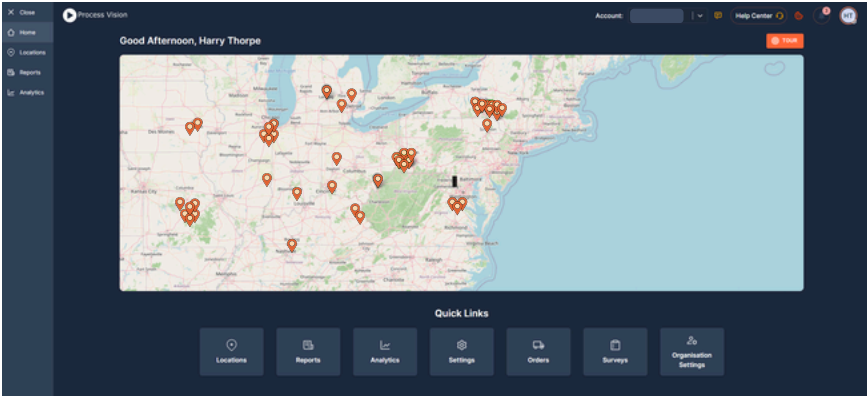
Configurable Alarm Outputs	2x Volt free contacts (e.g. High levels of motion detected)
System Fault Outputs	Volt free contact
Control System Integration	Modbus TCP/IP
Remote Access	Secure link to LineVu Portal (via Cellular Network, Starlink or WAN)
Control Room	Accessible through local network (e.g. live feed to the control room)

LineVu Portal

As well as providing an alarm upon a liquid carryover event, multiple users can remotely access videos, still shots, data analysis and reports via the LineVu Portal.

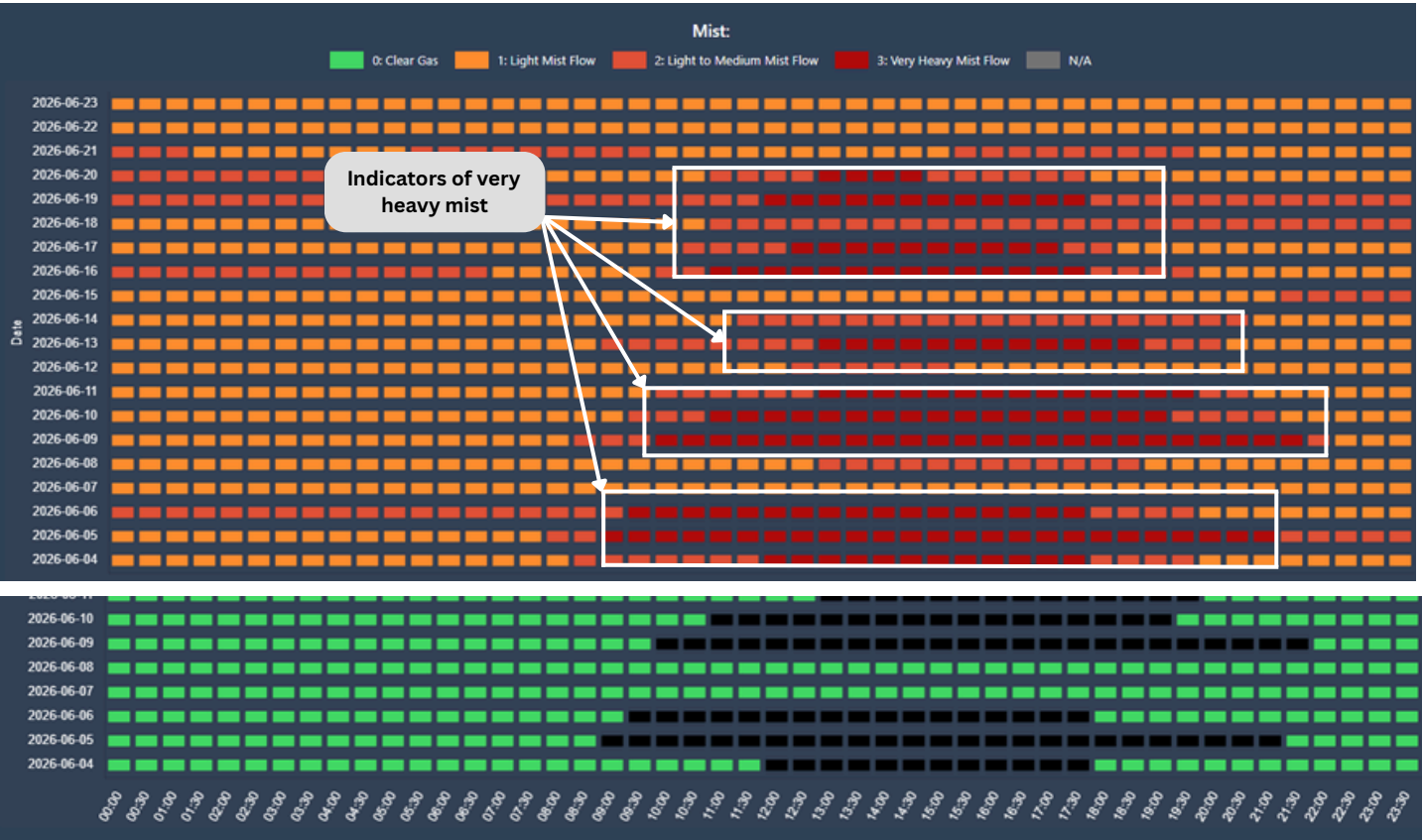
This unique infrastructure allows users to view and better understand the impact of changing process conditions.

Whether you want to request a report or download data and still shots for your own reports, the LineVu Portal is a secure and easy-to-use resource allowing 24/7 access to review liquid events and insights into diagnostics and impact reports.



Extra Insight

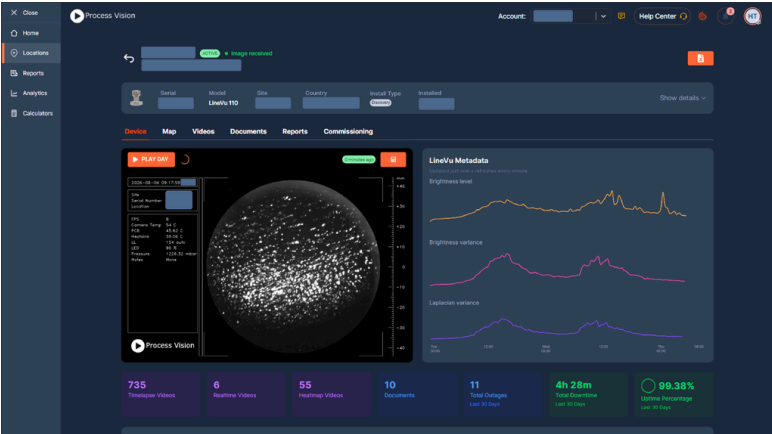
Mist level and liquid flow trends are visualised in heat maps, revealing repeating patterns of activity often linked to temperature, flow and pressure changes in the system



Secure Access

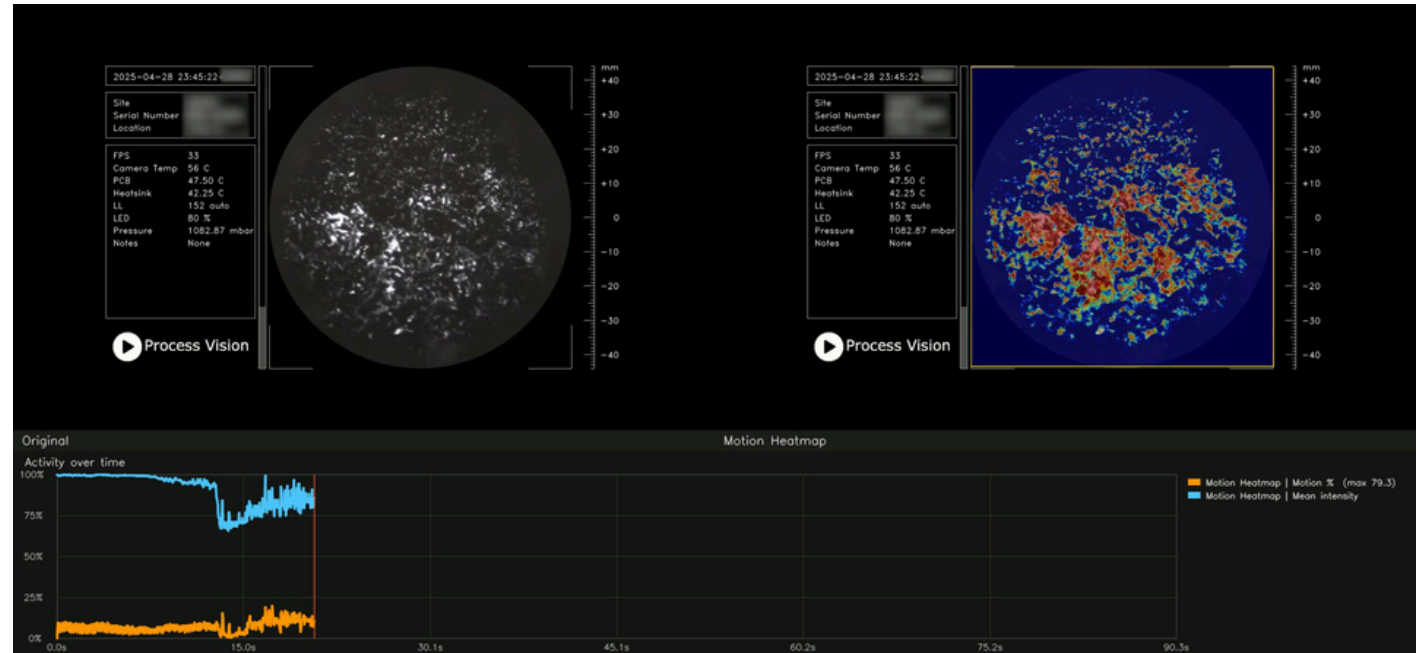
With two-factor authentication, users can securely access timelapse videos and request real-time sections of events. Image processing provides analysis of the changing process, allowing operators to take action to minimise the impact of the contamination event.

Upon an alarm condition, operators can be notified by a relay, Modbus, email or push notifications. With the right authentication, engineers in the field can access the data through their phones, tablets, or desktops.



Motion Detect

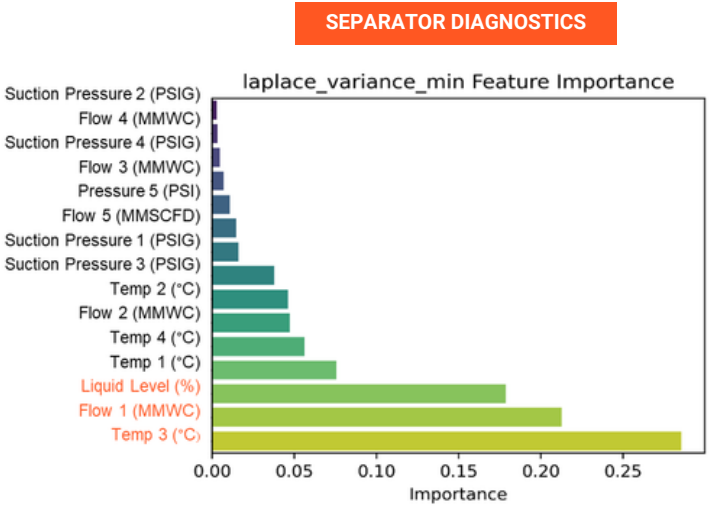
By adding artificial colours to regions of the video with high movement, events can be highlighted to make it easier to determine what is happening in the pipeline.



PhaseVu AI

Correlating process data and the metadata from image processing can pay big dividends for operators. This data is combined with **PhaseVu AI**, a machine learning model that produces a digital twin of separator performance and is able to provide operators with the main parameters that are driving liquid carryover.

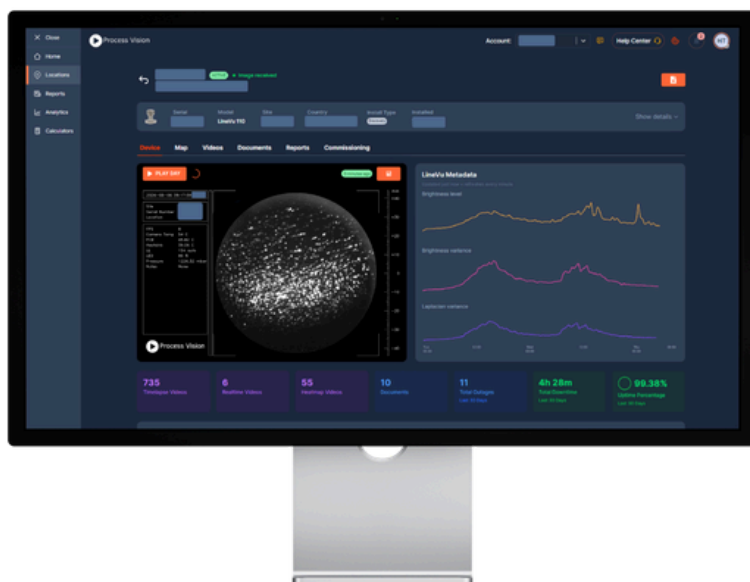
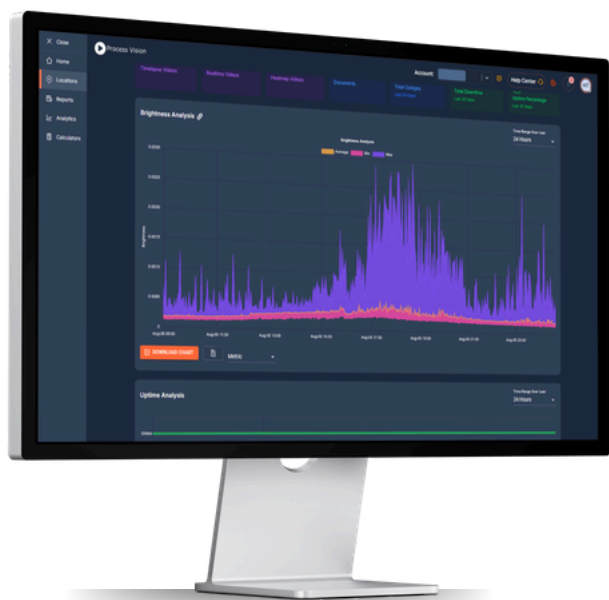
Further information and diagnostics can be obtained by installing a camera directly onto the vent port on a separator. The figure to the right shows that the liquid level in the separator is one of the three main parameters causing increased mist flow. In this example, lowering the height of the level alarm improves performance.





Now you can find out what's really going on

Get the data you need, when you need it. The LineVu Portal is the online platform enabling instant access to video analysis and data review for your fleet of installed LineVu systems 24/7 from anywhere in the world.



Remote Access



Fleet Oversight



Support Coordination



Proactive Alarm Notifications



Actionable Monthly Reports



Document Repository



Report Creation



SLA Management



Process Vision



info@processvision.com
www.processvision.com
+44 (0)1256 883 304

5 Beechwood, Lime Tree Way, Chineham Park, Basingstoke, RG24 8WA, UK
1650 Marietta Boulevard NW, Unit: C14, Atlanta, GA 30318, USA