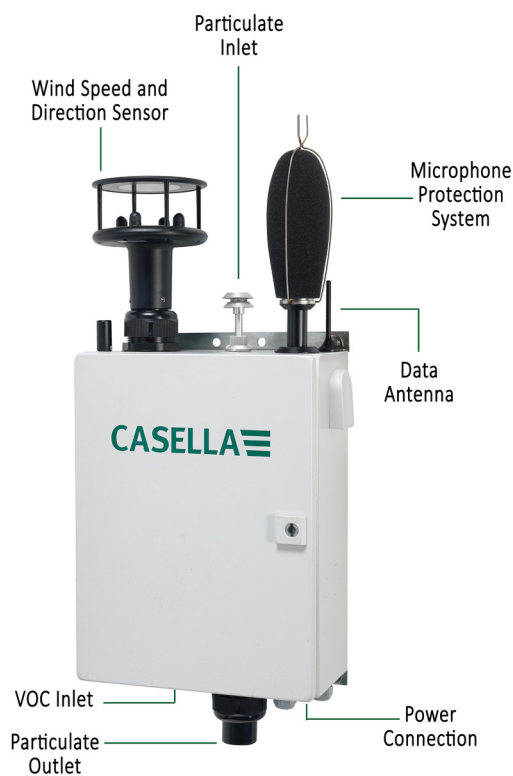# CASELLA≡
A DIVISION OF TSI

Guardian2

Multi-Agent Monitoring Station

Guardian2 is designed to help you remain compliant with site emission levels, using remote monitoring and reporting. The available configuration of sensors include noise, dust, vibration, windspeed and direction, plus organic vapours and gases.

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RENTALS

Guardian2 is a web-based remote monitoring system for noise, particulates, VOCs and ground vibration, either as single 'agents' or in multiple combinations. It is ideal for construction & demolition sites plus many more fence-line applications.

To ensure environmental and workplace compliance whilst retaining good relationships with neighbouring people and businesses, the Guardian2 can guarantee the smooth progress of your project or manufacturing operations.

Key Features

- Real-time particulate, noise, ground vibration (PPV) and VOC
- Wind parameters to identify dust sources
- Simultaneous PM10, PM2.5 and PM1.0 monitoring
- Web-hosted data with secure, password protected login
- Optional VOC sensor measures to 6000ppm
- Optional, maintenance free windspeed & direction sensor
- Email and text alerts to nominated recipients
- Manual or automatic reports
- IEC 61672-1 Class 1 compliant sound level meter
- Wall or pole mounted
- Powered by mains (100-250VAC), solar or battery
- Optional gas module with simultaneous Carbon Monoxide (CO), Nitric Oxide (NO), Nitrogen Dioxide (NO_2), Sulphur Dioxide (SO_2) monitoring.

Wind Speed and Direction Sensor

Particulate Inlet

Microphone Protection System

Data Antenna

VOC Inlet

Particulate Outlet

Power Connection

Gas Module

Optional gas module can be mounted below the Guardian2 unit. **(Part Number 208790D)**

Data Anywhere with
www.casella247.com

The mHUB datalogger incorporates an electronic SIM which means that the system will search for the strongest cellular signal but in the event of a lack of connectivity, the mHUB will continue to log then push the stored data to the server when communication is re-established. The Casella 24/7 Data Management System is accessible via a secure log-in, giving organisational administrators and nominated users access rights to data, reports and alerts.

CASELLA Cloud Hosting

SUNBELT RENTALS

Multiple Sensors

Guardian2 can be equiped with multiple environmental sensors to suit your needs. The system is flexible to have any combination of noise, dust, vibration, VOC and wind sensors.

Plug and Play

Integrated into a small, unobtrusive environmentally sealed housing, Guardian2 can be configured at the time of ordering for a variety of 'agents' depending upon the specific application or requirements. Installation couldn't be simpler; just bolt to a wall or mount on a pole, apply power and then within a few moments begin transmitting data using cellular connectivity to a secure server.

Communication Options

The Casella247 web platform based on cloud functionality ensures that the users get live updates from their Guardian2.

Users can select to receive alerts via email, SMS, website or even choose to setup their own FTP site to receive live data.

Power Sources

Guardian2 takes into account various power requirements for sites. Hence users can choose between mains, battery and solar power options.

FTP Settings

Casella 24/7 gives you an option and flexibility to transfer your Guardian2 data directly to your organisation's own website using FTP settings. This means that users don't need to rely on cloud hosting only.

The data will be pushed to the user's website in order to be integrated with other larger and meaningful data sets. This functionality benefits all organisations and system integrators dealing with complex environmental systems and projects.

Reporting and Alerts

Users can choose a number of people who have access to data as their can be multiple user sites with Guardian installations. Users can also switch between sites to view and receive alerts for the site of their interest.

Configure Reports

- For single or multiple agents at once e.g. noise and dust
- Automatic reports can be set to report daily, weekly or monthly data, direct to your inbox
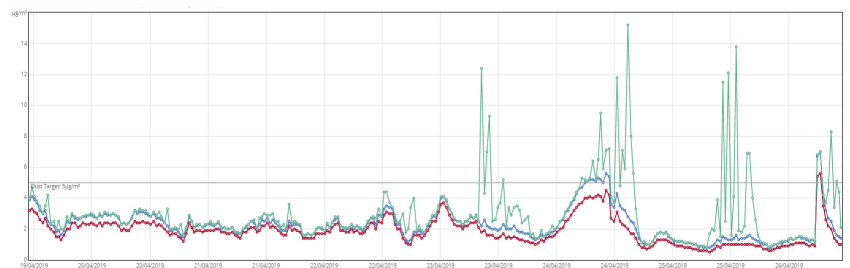- Graphical or tabular reports

Alert Configuration

- Configure alerts by text or email
- Can be configured for any measured parameter
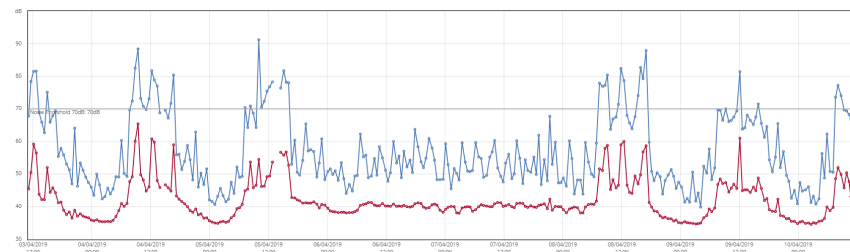- Error alerts, e.g. for power loss

User Configuration

- Different levels of access can be configured to Casella247.com
- Specify who just receives reports, or adminstrator access to configure reports and see Guardian2 units
- Configure Guardian2 units on different sites remotely

Report showing PM10, PM2.5 and PM1.0 dust levels

Report showing weekly noise data

Specification

Noise:
Accuracy:	Class 1 to IEC61672-1
Parameters:	L_{Aeq}, L_{Amax}, L_{Amin}, $L_{A10\%}$, $L_{A90\%}$, 10 hour L_{Aeq}
Measurement range:	20-140dB RMS
Calibration:	Via optional acoustic calibrator

Particulate:
Sensitivity:	1ug/m³
Zero stability:	+/-2ug/m³
Size fractions:	Simultaneous PM10, PM2.5 & PM1.0
Inlet:	Heated to reduce moisture affecting measurements

Vibration:
Transducer type:	Geophone outputting PPV and Hz data
Number of channels:	3-axis
Frequency range:	2-250 Hz
Measurement range:	+/- 200 mm/s
Resolution:	0.01 mm/s
Environmental rating:	IP65

Wind Speed:
	0-60m/s
Accuracy:	+/-2%
Resolution:	0.01m/s
Threshold:	0.01m/s

Wind Direction:
	0-359° (No deadband)
Accuracy:	+/-3%
Resolution:	0.1 degrees

Volatile Organic Compounds (VOC):
Range:	0-6000ppm
Detection limit:	0.1ppm
T90 response time:	3 seconds
Lamp:	10.6eV

Guardian2 Gas Module (Part Number 208790D)
Carbon Monoxide (CO)	0-500ppm
Nitric Oxide (NO)	0-20ppm
Nitrogen Dioxide (NO₂)	0-20ppm
Sulphur Dioxide (SO₂)	0-50ppm
Mounting:	Wall or Pole mounted (50mm pole)
Dimensions:	300mm x 200mm x 120mm
Weight:	4.36Kg (9.61lbs)

General:
Enclosure protection:	IP65
Operating Humidity:	<5% to 100%
Logger:	Inbuilt logger data transmission via GPRS
Mains Power:	100-250VAC
Mounting:	Wall or pole mounted (50mm pole)
Dimensions:	400mm x 300mm x 150mm
Weight	<13kg

Ordering Information

Guardian2 - Part Numbers

Part Number	Particulate (PM10 & PM2.5)	Noise	Vibration	Windspeed & Direction
208049D			●	●
208052D		●	●	
208054D		●		●
208057D		●		
208061D			●	
208063D		●	●	●
208170D	●	●	●	●
208171D	●	●		●
208172D	●		●	●
208173D	●			●
208174D	●	●	●	
208175D	●	●		
208176D	●			
208177D	●		●	

For VOC Sensor Assembly simply add /VOC to the end of the part number above

Optional Accessories	Part Number
Replacement windshield enclosure system	208041C
Windshield enclosure System extension kit (incl. 5m extension & bracket)	208104D
Spare 5m windshield extension cable	208083C
Replacement foam	208022C
Acoustic calibrator	CEL-120/1
VOC calibrator kit (gas not supplied)	208147A
Gas Module	208790D

Solar Power Parts	Part Number
Solar Controller & Battery Enclosure*	208500D
Single Solar Panel Array	208512D
Dual Solar Panel Array	208511D
Triple Solar Panel Array	208510D

For details of how many solar panels are required for a specific territory please visit the casella website. Solar panels come complete with mounts for scaffold poles.

Battery Power Parts	Part Number
Will power a Guardian2 for between 5-9 days depending on the configuration	
Battery enclosure*	208503D

Battery Backup Parts	Part Number
Battery will provide backup power in the event of mains failure	
Mains/Battery enclosure*	208504D

*Order battery separately

Battery	Part Number
12V Leisure Battery (130Ah)	B162