

07 RAIN GAUGES AND RECORDERS



All traditional rain gauges are manufactured using copper and non-ferrous materials for maximum life.

1. SNOWDON RAIN GAUGE

The Snowdon gauge is a popular, general purpose rain gauge. The collection aperture has an accurately turned bevelled rim to minimise splashing.

WMO Commission for Instruments and Methods of Observation No. 727



2. OCTAPENT RAIN GAUGE

This high capacity gauge is suitable for use at remote sites where daily access is impractical. It is manufactured with consideration to BS 7843 part 2.1. Bradford-type gauges are also available on request.



3. SPLAYED BASE RAIN GAUGE

This rain gauge is similar to the Snowdon gauge but has a splayed base for greater stability.

Applicable Standards

BS 7843 Guide to acquisition and management of MET precipitation data recorders parts 1 and 2

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Specification	SNOWDON RAIN GAUGE	OCTAPENT RAIN GAUGE	SPLAYED BASE RAIN GAUGE
Diameter of aperture	127mm	127mm	127mm
Rainfall capacity – Glass bottle	75mm	680mm	75mm
glass bottle + inner can	140mm		140mm
Dimensions	140 diameter x 460mm high	330 diameter x 680mm high	216 diameter x 490mm high
Weight	2.9kg (with bottle)	5.7kg (with bottle)	3.5kg (with bottle)
Ordering information			
Rain gauge with inner can and collection bottle (measuring jar not included)	M114001	A8447/Z	M114003
Accessories and spares			
Collection bottle	M114017	M114017	M114017
Contact Details			
Sales	Tel: +44 (0) 1234 841468	Fax: +44 (0) 1234 841490	
Service	Tel: +44 (0) 1234 844146	Fax: +44 (0) 1234 841490	e-mail: info@casella.co.uk

CASELLA
CEL

APPLICATION STORY

Environment Agency Kent
Splayed Base Rain Gauge



In Kent the Environment Agency have a countywide network of some 200 rain gauges. Many of these are kept in private gardens, some in water company compounds. The gauges are read daily at 9.00am by an observer and in the case of

private individuals the information is sent in to the Environment Agency at the end of the month.

Data collected is for the proceeding month, giving the Environment Agency daily rainfall data and its distribution, enabling analysis of rainfall events, for example heavy rainfall events are usually localised. This information helps with flood prediction and warning as well as water resource management, which are major parts of the Environment Agency's responsibility to the local population. The information for the month is then passed on to the

Meteorological Office for evaluation.

The Met. Office approves nearly every rain gauge site and reviews each site once every two years. They check that the rain gauge is properly situated, i.e. not over shadowed by buildings or vegetation.

Casella CEL rain gauges are used for several reasons

- Use of a Meteorological Office approved design.
- Robust - people have been known to accidentally 'mow' their rain gauge.
- Established reputation.

Instrumentation
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MEASURING JARS

Three types of measuring jars are available; Flat, Tapered and Camden. Tapered and Camden jars have additional measuring divisions in the bottom section. The Flat and Camden jars have flanged bases to enable them to stand vertically.

Ordering Information	MEASURING JARS						
	Rain gauge	Pattern Aperture (dia)	Rainfall	Divisions Capacity	Additional Division	Dimensions (dia x ht)	Weight
M114008	127mm	Camden	10mm	0.1mm	0.05mm	76 x 250mm	283g
M108007	127mm	Flat	10mm	0.1mm		60 x 200mm	140g
M114010	127mm	Tapered	10mm	0.1mm	0.05mm	44 x 280mm	115g
M114011	127mm	Flat	10mm	0.1mm		75 x 200mm	125g
M114012	127mm	Flat	25mm	0.5mm		75 x 260mm	170g
M114013	127mm	Flat	50mm	0.5mm		100 x 380mm	397g

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NATURAL SIPHON RAINFALL RECORDER

The Natural Siphon Rainfall Recorder provides a continuous graphical record of rainfall against time and can be supplied with either a daily or weekly clock.

Applicable Standards

BS 7843 Guide to acquisition and management of MET precipitation data recorders parts 1 and 2

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TILTING SIPHON RAINFALL RECORDER

The Tilting Siphon Rainfall Recorder provides a continuous graphical record of rainfall against time.

Specification	NATURAL SIPHON RAINFALL RECORDERS	
	LARGE APERTURE	SMALL APERTURE
Diameter of aperture	203mm	128.5mm
Area of aperture	323.7cm ²	129.7cm ²
Rainfall capacity	Unlimited	Unlimited
Siphoning occurs	10mm intervals	25mm intervals
Siphoning time	12 - 15 seconds	12 - 15 seconds
Time scale	Daily: 127mm/hr Weekly: 18mm/hr	Daily: 315mm/hr Weekly: 45mm/hr
Charts	300 x 90mm	300 x 90mm
Dimensions	635 x 305mm	635 x 305mm
Weight	8.2kg	8.2kg
Clock	8-day spring driven (daily or weekly rotation)	8-day spring driven (daily or weekly rotation)
Max. rainfall easily distinguishable	Daily: 172mm/hr Weekly: 18mm/hr	Daily: 315mm/hr Weekly: 45mm/hr
Ordering information		
203mm diameter, daily clock*	M114019	N/A
203mm diameter, weekly clock*	M114020	N/A
128.5mm diameter, daily clock*	N/A	M114021
128.5mm diameter, weekly clock*	N/A	M114022
* Supplied with 2 pens. All charts must be ordered separately		
Accessories and spares		
200 daily charts (0 - 10mm) for 203mm diameter aperture	M107804	N/A
200 weekly charts (0 - 10mm) for 203mm diameter aperture	M107803	N/A
200 daily charts (0 - 25mm) for 128.5mm diameter aperture	N/A	M107801
200 weekly charts (0 - 25mm) for 128.5mm diameter aperture	N/A	M107802
Pack of 2 pens	M114027	M114027
Anti-frost safety disc for float chamber	6049/A32	6049/A32
Change wheels (weekly to daily clock)	M114025	M114025
Change wheels (daily to weekly clock)	M114026	M114026

Specification	TILTING SIPHON RAINFALL RECORDERS	
	LARGE APERTURE	SMALL APERTURE
Diameter of aperture	287.3mm	128.5mm
Area of aperture	648.3cm ²	129.7cm ²
Rainfall capacity	Unlimited	Unlimited
Siphoning occurs	Every 5mm	Every 25mm
Siphoning time	6 to 10 seconds	6 to 10 seconds
Time scale	11.4mm/hr	11.4mm/hr
Charts	300 x 90mm	300 x 90mm
Dimensions	Approx. 860 x 500mm (dia)	Approx. 860 x 500mm (dia)
Weight	24.1kg	23.5kg
Clock	8-day spring driven	8-day spring driven
Ordering Information		
Daily temperate model, supplied with 2 pens	M114028	
Daily tropical model, supplied with 2 pens	M114029	
Charts must be ordered separately		
Accessories and spares		
200 daily charts (DLY 0.5mm) for temperate model	M107805	
200 daily charts (DLY 0.25mm) for tropical model	M107806	
Pack of 2 pens for either temperate or tropical models	M118004	
Transparent template to determine duration and rate of rainfall	M114030	
Contact Details		
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Tipping bucket rain gauge



Advanced tipping bucket rain gauge

TIPPING BUCKET RAIN GAUGE

The Casella CEL Tipping Bucket Rain Gauge is a reliable and extremely robust transducer, designed as a stand-alone sensor for operation within an existing logging system, such as the Casella CEL Automatic Weather Station. The body and funnel are made from aluminium alloy with an accurately machined septum ring at the top giving an aperture of 400cm². The tipping bucket mechanism is mounted inside the body on a cast aluminium-alloy base, incorporating a built-in spirit level to ease correct positioning.

The rain gauge comprises a divided bucket assembly, which is pivoted at the centre. Rain collects in one side of the bucket, which then tips when a predetermined volume of water has been collected. The tipping action discharges the collected water and repositions the opposite side of the bucket under the discharge nozzle ready for filling. The bucket tips are monitored by means of a sealed reed switch, capable of indefinite operation, thus ensuring that this instrument has a long working life.

Applicable Standards

BS 7843 Guide to acquisition and management of MET precipitation data recorders part 1 and 2

ADVANCED TIPPING BUCKET RAIN GAUGE

Key Features

- 0.2 & 0.5mm bucket size
- Double output relay contacts
- 5mm diameter drop tube
- Bucket adjusting studs increased to M6
- Retained hexagonal headed long base-mounting screws for additional security
- Bucket painted BS 14C39 green
- Quick-release terminal blocks and military spec external connectors rated to IP67 fitted to underside for rapid exchange in the field
- Heater can be retro-fitted to a pre-drilled base

Introduction

A new version of the Casella CEL Tipping Bucket Rain Gauge has been specifically adapted to meet the requirements of the UK Environment Agency's specification, is available to customers.

This gauge has been specifically adapted to meet the framework directive of the UK Environment Agency for operating tipping bucket rain gauges.

Connection to logging equipment is via IP67 rated quick-release connectors under the base plate.

Extended mounting screws are fitted to raise the base plate above ground level.

The rain gauge calibration complies with Method 1 of BS 7483.



Specification	TIPPING BUCKET RAIN GAUGE
Bucket sizes	0.1, 0.2 or 0.5mm
Aperture	400cm ²
Accuracy	±1% @ 1 litre/hr
Weight	2.6kg
Ordering information	
0.1mm Tipping Bucket Rain Gauge (light rainfall)	102471E
0.2mm Tipping Bucket Rain Gauge (moderate rainfall)	100000E
0.5mm Tipping Bucket Rain Gauge (heavy rainfall)	100573E

Specification	ADVANCED TIPPING BUCKET RAIN GAUGE
Bucket sizes	0.2 or 0.5mm
Aperture	400cm ²
Accuracy	±1% at 1 litre/hour
Capacity	Unlimited
Operating temperature range	-20°C to 85°C
Thermostat range	-20°C to 40°C
Transducer	Magnet/Reed switch
Cable rating	2A at 24V AC, 4-Core
Connector rating	IP67
Output	Contact closure
Bucket adjusting studs	M6
Weight	2.6kgm
Ordering information	
0.2mm Advanced Tipping Bucket Rain Gauge	103755E

Contact Details

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