

Richard Paul Russell Ltd

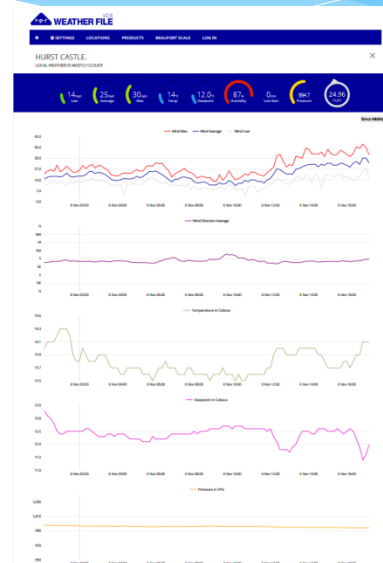
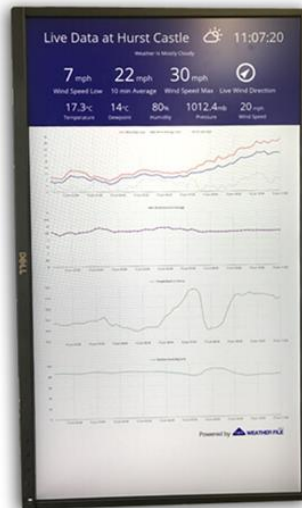
Wind Monitoring Overview

GSM Cellular Only WeatherFile System



**RICHARD PAUL
RUSSELL LTD**

Professional weather stations, internet connected, free cloud presentation & data storage



Site	Time	Wind Dir	Wind Spd	Avg Direction	Refract	Humid	Airly Temp	Humidity %	Pressure	Barometric
E-New	11:00		10	0.1775	100°	100°	16.1	51.0	30.01	0
	11:30		10	0.1775	100°	100°	16.1	51.0	30.01	0
	12:00		10	0.1775	100°	100°	16.1	51.0	30.01	0
E-New	12:30		10	0.1775	100°	100°	16.0	51.0	30.01	0
	13:00		10	0.1775	100°	100°	15.9	51.0	30.01	0
	13:30		10	0.1775	100°	100°	15.8	51.0	30.01	0
E-New	14:00		10	0.1775	100°	100°	15.7	51.0	30.01	0
	14:30		10	0.1775	100°	100°	15.6	51.0	30.01	0
	15:00		10	0.1775	100°	100°	15.5	51.0	30.01	0
E-New	15:30		10	0.1775	100°	100°	15.4	51.0	30.01	0
	16:00		10	0.1775	100°	100°	15.3	51.0	30.01	0
	16:30		10	0.1775	100°	100°	15.2	51.0	30.01	0
E-New	17:00		10	0.1775	100°	100°	15.1	51.0	30.01	0
	17:30		10	0.1775	100°	100°	15.0	51.0	30.01	0
	18:00		10	0.1775	100°	100°	14.9	51.0	30.01	0
E-New	18:30		10	0.1775	100°	100°	14.8	51.0	30.01	0
	19:00		10	0.1775	100°	100°	14.7	51.0	30.01	0
	19:30		10	0.1775	100°	100°	14.6	51.0	30.01	0
E-New	20:00		10	0.1775	100°	100°	14.5	51.0	30.01	0
	20:30		10	0.1775	100°	100°	14.4	51.0	30.01	0
	21:00		10	0.1775	100°	100°	14.3	51.0	30.01	0
E-New	21:30		10	0.1775	100°	100°	14.2	51.0	30.01	0
	22:00		10	0.1775	100°	100°	14.1	51.0	30.01	0
	22:30		10	0.1775	100°	100°	14.0	51.0	30.01	0
E-New	23:00		10	0.1775	100°	100°	13.9	51.0	30.01	0
	23:30		10	0.1775	100°	100°	13.8	51.0	30.01	0
	00:00		10	0.1775	100°	100°	13.7	51.0	30.01	0

- Highest quality weather stations
- Simple super fast setup
 - Live data in minutes
- Durable / maintenance free
 - Fit & forget

- Data sent directly to the internet
- Professional clean data view
- Free cloud solution (Weatherfile.com)
- Email alerts. Alarm notifications direct to your inbox

- Data line graphs
- Downloadable .csv data format for later analysis
- Free data storage
- Full data history access free of charge

Summary

- * Live weather data directly to the internet
- * Maintenance free super accurate sensors resulting in a cost effective long term solution
- * WeatherFile viewable from **any internet connected device**
- * WeatherFile viewable from **any location**
- * Email alert functionality allows direct notification if certain weather parameter limits are exceeded
- * Long term data storage and graphing as standard
- * Public or private page setting options
- * Free data storage and hosting



Summary Cont'd

- * Connectivity either via local LAN, WiFi or GSM mobile cellular network, thus can be located remotely if required
 - * GSM mobile cellular network connection would be standalone and secure
 - * Note pricing based on customer supplying SIM card allow maximum of £80 per annum for data charge
- * 12Vdc power supply either via mains adaptor or local battery, again allowing remote location regardless of local power availability
- * Local standalone monitor display that can show multiple locations
- * Multiple fixing solutions including Tripod, Mast (1m/1.6m/3m), Wall Bracket etc
- * 2 year warranty as standard

Sensor Options & Parameters Measured

Sensor Options

- Gill WindSonic WS1
- Gill MetPak
- Gill GMX200
- Gill GMX500
- Gill GMX600
- All sensors based around ultrasonic technology
- Solid state technology no moving parts, fit and forget
- Maintenance free
- Super accurate

	WS1	MetPak	GMX200	GMX500	GMX600
Wind Speed	■	■	■	■	■
Wind Direction	■	■	■	■	■
Apparent / True Wind Speed			■	■	■
WMO Wind AV/Gust			■	■	■
Air Temperature		■		■	■
Air Pressure				■	■
Relative Humidity		■		■	■
Absolute Humidity				■	■
Barometric Pressure		■		■	■
Dew Point		■		■	■
Precipitation					■
Compass			■	■	■
GPS Positioning			■	■	■

Sensor Options & Parameters Measured

Sensor Options

- Gill WindSonic WS1
- Gill MetPak
- Gill GMX200
- Gill GMX500
- Gill GMX600 or GMX531
- Calypso
- LCJ Capteurs
- All sensors based around ultrasonic technology
- Solid state technology no moving parts, fit and forget
- Maintenance free
- Super accurate

	Calypso WS1	MetPak	GMX200	GMX500	GMX600
Wind Speed	■	■	■	■	■
Wind Direction	■	■	■	■	■
Apparent / True Wind Speed			■	■	■
WMO Wind AV/Gust			■	■	■
Air Temperature		■		■	■
Air Pressure				■	■
Relative Humidity		■		■	■
Absolute Humidity				■	■
Barometric Pressure		■		■	■
Dew Point		■		■	■
Precipitation					■
Compass			■	■	■
GPS Positioning			■	■	■

Sensor Technology

- * Advantages of Ultrasonic sensor technology
- * Durability
 - * Made from LURAN UV stabilised thermoplastic
 - * Solid-state no fragile wind cups
- * No Moving Parts
 - * Ultrasonic technology is solid-state and has no moving parts
 - * Long term data accuracy guaranteed
 - * No bearings to wear, bearings degrade with time providing poor quality data
- * Highest Accuracy
 - * $\pm 2\%$ @ 12m/s
- * Wind Speed range
 - * 0 to 60 m/s (116 knots, 134 mph)
- * Wider operating temperature range: -35°C to $+70^{\circ}\text{C}$
- * All parameters measured in 1 unit, compact, durable with less component error



Calypso Sensor Technology

- * Wind speed and direction
- * Wind Speed:
 - * Range: 1 m/s to 25 m/s (1.94 knots to 48 knots, 2.23mph to 55.92mph)
 - * Resolution: ± 0.1 m/s at 10m/s
- * Wind direction:
 - * Range: 0 - 360°
 - * Resolution: $\pm 1^\circ$

Advantages of Ultrasonic sensor technology

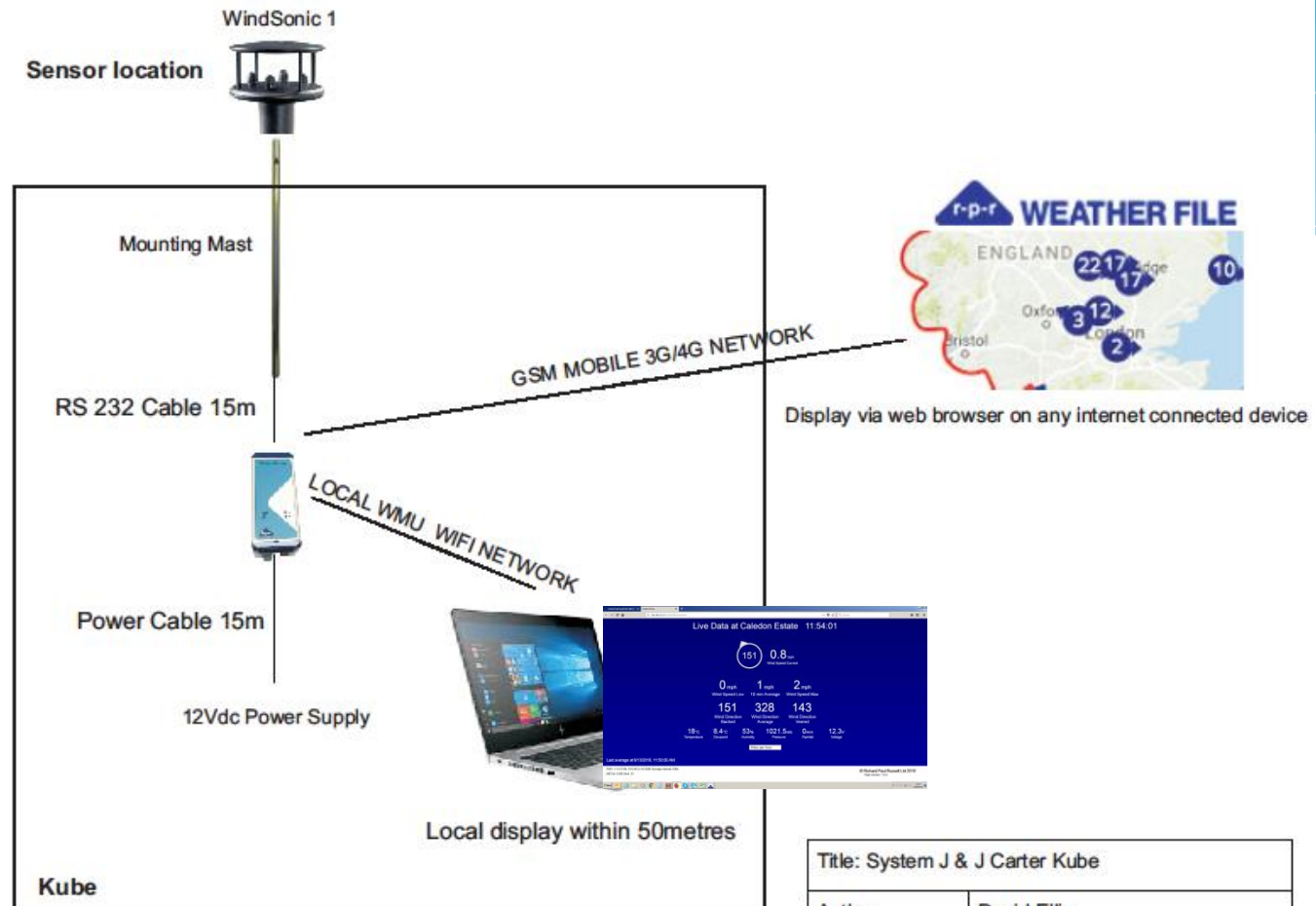
- * Durability
- * No Moving Parts
 - * Ultrasonic technology is solid-state and has no moving parts
 - * Long term data accuracy guaranteed
 - * No bearings to wear, bearings degrade with time providing poor quality data
- * All parameters measured in 1 unit, compact, durable with less component error



Chosen Sensor Options

- * **Calypso**
 - * Ultrasonic sensor, wind speed & direction
 - * Lower upper wind speed reading limit
 - * Would need to manually align to north
 - * Would need to manually locate on WeatherFile map
- * **WindSonic 1**
 - * Ultrasonic sensor, wind speed & direction
 - * Would need to manually align to north
 - * Would need to manually locate on WeatherFile map
- * **GMX200 GPS**
 - * Ultrasonic sensor, wind speed & direction
 - * Integrated GPS & compass automatically aligns to north & sets GPS location on WeatherFile map automatically
- * **GMX600 GPS**
 - * Ultrasonic sensor, wind speed & direction, temperature, relative humidity, barometric pressure, absolute humidity, air density, wet bulb temperature, precipitation
 - * Integrated GPS & compass automatically aligns to north & sets GPS location on WeatherFile map automatically

System Example



Title: System J & J Carter Kube

Author David Ellis

Date 01/05/2019

Quotations

System 1 Mobile Cellular, Wind Speed & Direction	Cost ex VAT
Calypso Sensor inc 33cm mast and 20m cable	£ 379.95
WeatherFile Communication Unit (WCU) - GSM Cellular Connected	£ 544.13
12Vdc Supply (cable 15m) & Main Adaptor Plug	£ 32.95
Total ex VAT	£ 957.03
* Customer supplying SIM card	
** For Gill WindSonic add £424.22 ex VAT	
*** For Gill GMX200 GPS add £737.22 ex VAT	
**** For Gill GMX600 GPS add £1568.22 ex VAT	



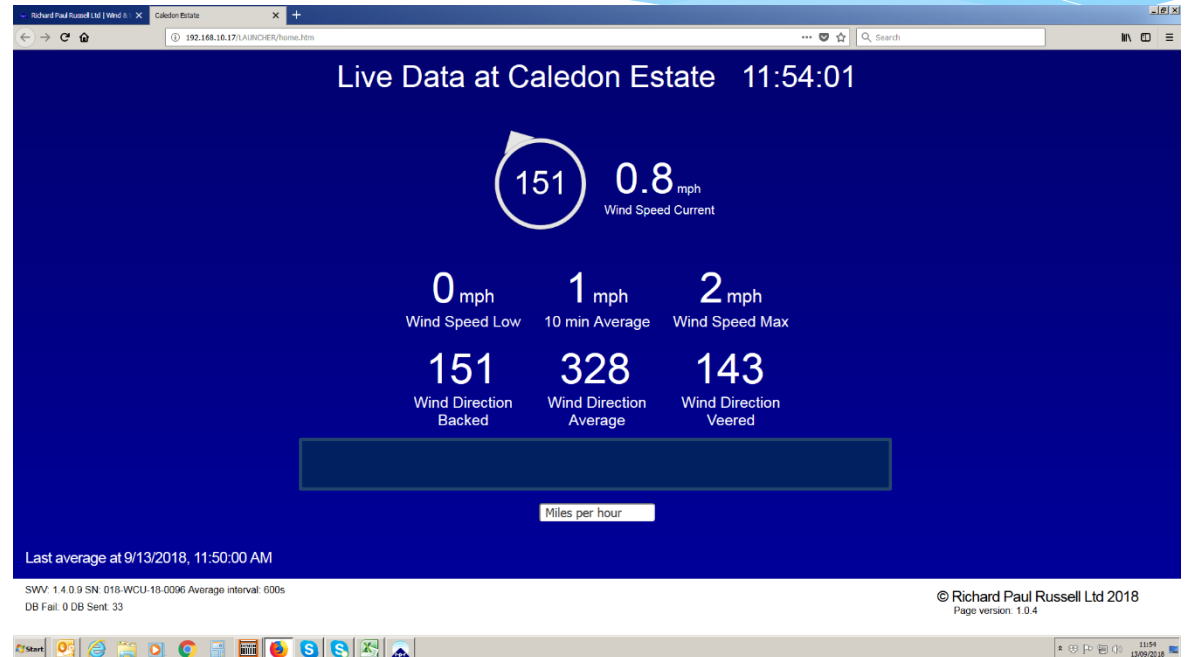
WeatherFile Communication Unit

- * Mobile network transfer of wind and weather data to WeatherFile.com over GSM Cellular Network, Local WiFi or Local LAN network
- * Display on WeatherFile.com viewable on any internet connected device
- * WCU provides Wi-Fi to enable access to a local data display page
- * Logs wind and weather data
- * Compatible with WindSonic, MaxiMet & MetPak & other RS232 sensors
- * Rugged IP67 compact enclosure with push fit IP67 connectors



Local Page Display

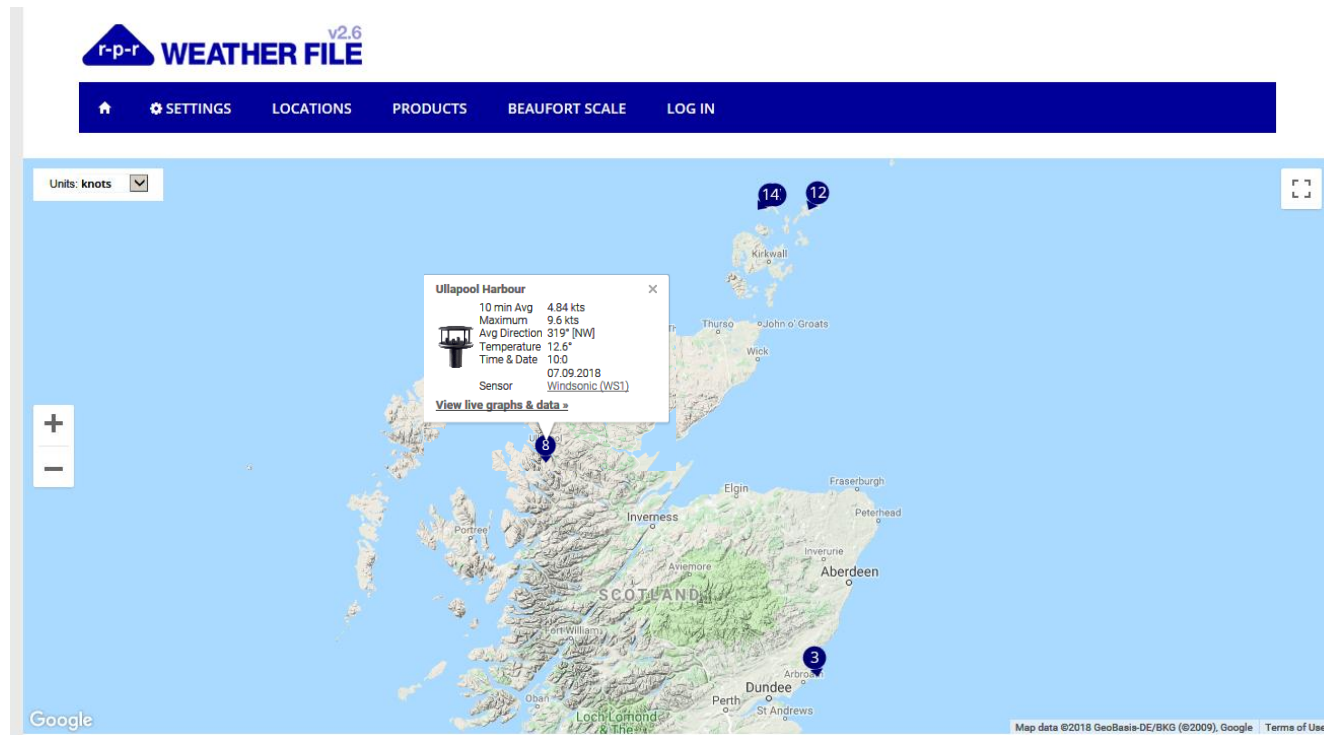
- * This is local display you will see on your android or IOS device within 30m-50m of WeatherFile Mobile Unit



**RICHARD PAUL
RUSSELL LTD**

Website Page Views (Home Page)

- * WeatherFile home page will auto to your geographical area
- * Hover on icon and will show local live data



Website Page Views (Location Page)

- * Location page for each stage can be viewed directly on WeatherFile

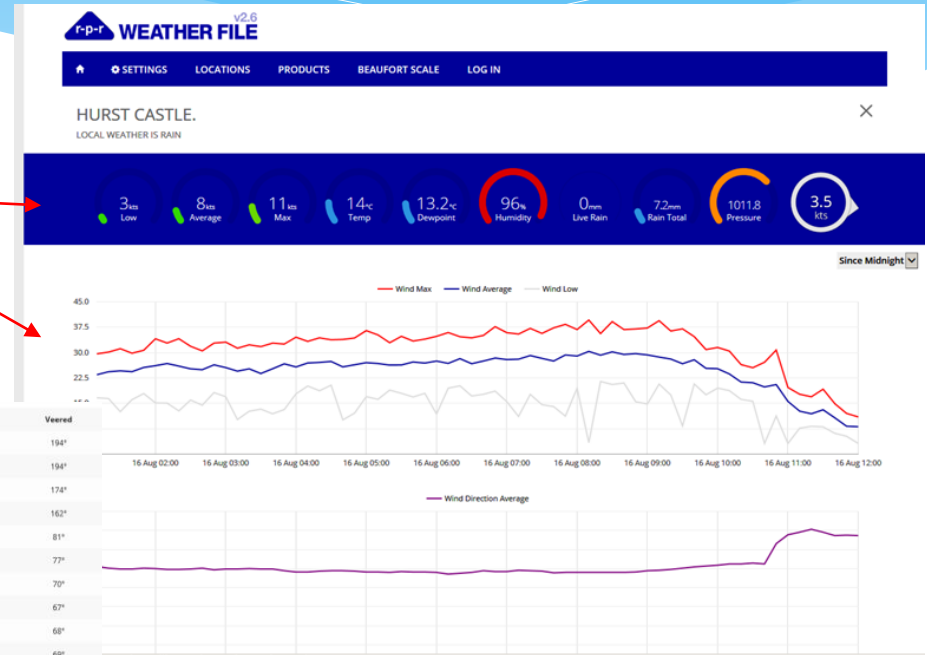


Live readings

10 minute average graphs

10 minute average .CSV view

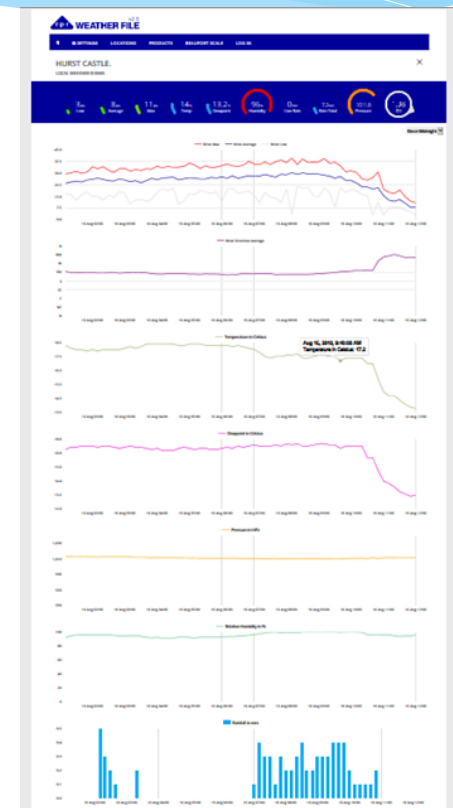
Date	Time	Wind Low	Wind Avg	Wind Max	Avg Direction	Beaked	Veered
24 Apr	10:10	5	10	15	S (165°)	135°	194°
24 Apr	10:00	6	10	16	S (172°)	132°	194°
24 Apr	09:50	5	9	16	SE (145°)	128°	174°
24 Apr	09:40	4	9	16	E (85°)	60°	162°
24 Apr	09:30	4	9	11	E (70°)	62°	81°
24 Apr	09:20	4	8	10	NE (67°)	57°	77°
24 Apr	09:10	4	9	11	NE (56°)	45°	70°
24 Apr	09:00	4	9	11	NE (56°)	48°	67°
24 Apr	08:50	4	9	11	NE (57°)	46°	68°
24 Apr	08:40	4	9	10	NE (61°)	50°	69°
24 Apr	08:30	4	9	10	E (72°)	61°	80°
24 Apr	08:20	4	10	11	E (75°)	66°	83°
24 Apr	08:10	4	9	10	E (75°)	68°	81°
24 Apr	08:00	4	9	11	E (74°)	66°	82°
24 Apr	07:50	4	9	11	NE (67°)	56°	78°
24 Apr	07:40	4	10	12	NE (67°)	55°	76°
24 Apr	07:30	4	10	11	NE (64°)	55°	81°
24 Apr	07:20	4	9	12	NE (62°)	49°	74°
24 Apr	07:10	4	9	11	E (71°)	61°	80°
14 Aug	07:00	4	9	11	E (64°)	41°	80°



Data

- * Live data view
- * Graph data that can. User selected time periods
- * Data download in CSV format for graphing, analysis and reporting
- * .CSV data download is based on 10 minute average, 1 reading per second, 600 samples make up the 10 minute average

Time Stamp	Unit Name	Date	Time	wdb	wda	wdv	wsl	wsa	wsh	smp	hpa	hum	ta	td	prr	a1	a2	d1	vlt	createts	pos	sol	pt
02/07/2018 00:00	GBR00002	02/07/2018	00:00:00	8	20	36	3.9	6.05	7.52	600	1009.7	64.8	21.4	14.6						11.7	02/07/2018 01:00	50.706226, -1.553524	0
02/07/2018 00:10	GBR00002	02/07/2018	00:10:00	11	22	35	3.99	5.49	6.94	600	1009.7	63.2	21.5	14.3						11.7	02/07/2018 01:10	50.706226, -1.553524	0
02/07/2018 00:20	GBR00002	02/07/2018	00:20:00	12	21	36	3.68	5.19	6.21	600	1009.7	64.3	21.3	14.4						11.7	02/07/2018 01:20	50.706226, -1.553524	0
02/07/2018 00:30	GBR00002	02/07/2018	00:30:00	12	25	41	2.95	5.66	7.16	601	1009.8	63	21.5	14.2						11.7	02/07/2018 01:30	50.706226, -1.553524	0
02/07/2018 00:40	GBR00002	02/07/2018	00:40:00	11	25	53	3.18	5.75	7.23	600	1009.8	63.3	21.6	14.4						11.7	02/07/2018 01:40	50.706226, -1.553524	0
02/07/2018 00:50	GBR00002	02/07/2018	00:50:00	8	25	55	2.84	5.67	7.02	600	1009.9	63.1	21.4	14.2						11.7	02/07/2018 01:50	50.706226, -1.553524	0
02/07/2018 01:00	GBR00002	02/07/2018	01:00:00	1	26	55	3.28	5.7	6.95	600	1009.9	62.6	21.3	14						11.7	02/07/2018 02:00	50.706226, -1.553524	0
02/07/2018 01:10	GBR00002	02/07/2018	01:10:00	14	26	40	4.28	5.61	6.97	600	1010	63.6	21.2	14.1						11.7	02/07/2018 02:10	50.706226, -1.553524	0
02/07/2018 01:20	GBR00002	02/07/2018	01:20:00	10	24	53	3.16	4.91	6.27	600	1010.1	65.7	20.9	14.4						11.7	02/07/2018 02:20	50.706226, -1.553524	0
02/07/2018 01:30	GBR00002	02/07/2018	01:30:00	10	25	65	2	4.6	5.85	599	1010.1	65.1	21	14.3						11.7	02/07/2018 02:30	50.706226, -1.553524	0
02/07/2018 01:40	GBR00002	02/07/2018	01:40:00	10	24	37	2.94	4.19	5.58	600	1010.1	66.3	20.9	14.5						11.7	02/07/2018 02:40	50.706226, -1.553524	0



**RICHARD PAUL
RUSSELL LTD**

Richard Paul Russell Ltd

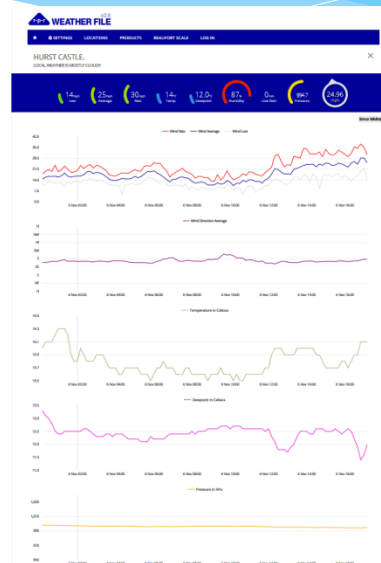
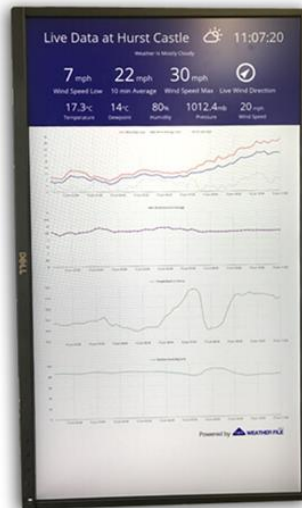
Wind Monitoring Overview

Temporary Structure WeatherFile System
LAN and GSM Cellular Connected



**RICHARD PAUL
RUSSELL LTD**

Professional weather stations, internet connected, free cloud presentation & data storage

[illegible]

- Highest quality weather stations
- Simple super fast setup
 - Live data in minutes
- Durable / maintenance free
 - Fit & forget

- Data sent directly to the internet
- Professional clean data view
- Free cloud solution (Weatherfile.com)
- Email alerts. Alarm notifications direct to your inbox

- Data line graphs
- Downloadable .csv data format for later analysis
- Free data storage
- Full data history access free of charge

Durable IP rated case with foam padding



Sensor Options & Parameters Measured

Sensor Options

- Gill WindSonic WS1
- Gill MetPak
- Gill GMX200
- Gill GMX500
- Gill GMX600
- All sensors based around ultrasonic technology
- Solid state technology no moving parts, fit and forget
- Maintenance free
- Super accurate

	WS1	MetPak	GMX200	GMX500	GMX600
Wind Speed	■	■	■	■	■
Wind Direction	■	■	■	■	■
Apparent / True Wind Speed			■	■	■
WMO Wind AV/Gust			■	■	■
Air Temperature		■		■	■
Air Pressure				■	■
Relative Humidity		■		■	■
Absolute Humidity				■	■
Barometric Pressure		■		■	■
Dew Point		■		■	■
Precipitation					■
Compass			■	■	■
GPS Positioning			■	■	■

Sensor Technology

- * Advantages of Ultrasonic sensor technology
- * Durability
 - * Made from LURAN UV stabilised black thermoplastic
 - * Solid-state no fragile wind cups
- * No Moving Parts
 - * Ultrasonic technology is solid-state and has no moving parts
 - * Long term data accuracy guaranteed
 - * No bearings to wear, bearings degrade with time providing poor quality data
- * Highest accuracy
 - * $\pm 2\%$ @ 12m/s
- * Wider operating temperature range: -35°C to $+70^{\circ}\text{C}$
- * All parameters measured in 1 unit, compact, durable with less component error



Summary

- * Live weather data directly to the internet
- * Maintenance free super accurate sensors resulting in a cost effective long term solution
- * WeatherFile viewable from any internet connected device
- * WeatherFile viewable from any location
- * Email alert functionality allows direct notification if certain weather parameter limits (wind speed) are exceeded
- * Long term data storage and graphing as standard
- * Public or private page setting options
- * Free data storage and hosting

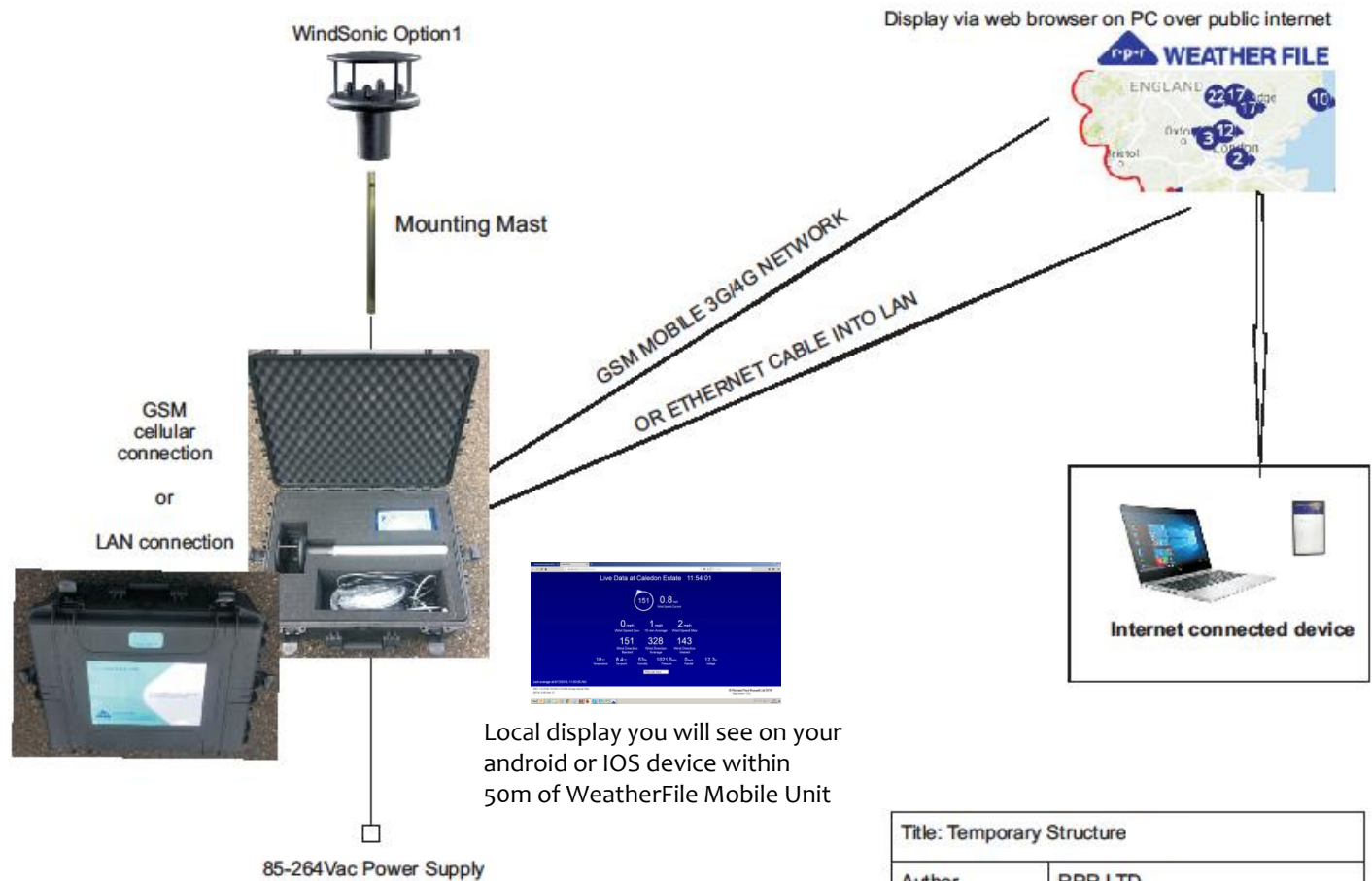


Summary Cont'd

- * Connectivity via local LAN or GSM mobile cellular network.
 - * SIM card & network supplied by us or customer. Annual cost of SIM card no higher than £80.
 - * LAN network connection via supplied ethernet cable and IP rated LAN socket
 - * LAN is default and if available will always prioritise
- * System automatically switches to LAN when available and back to GSM cellular when LAN unavailable
- * 12Vdc power supply via blue outdoor IP rated plug socket
- * 450MM mounting mast
- * 3m & 15m RS232 cable with IP rated plug
- * 2 year warranty as standard



System Schematic



Title: Temporary Structure	
Author	RPR LTD
Date	27/09/2019

Local Page Display

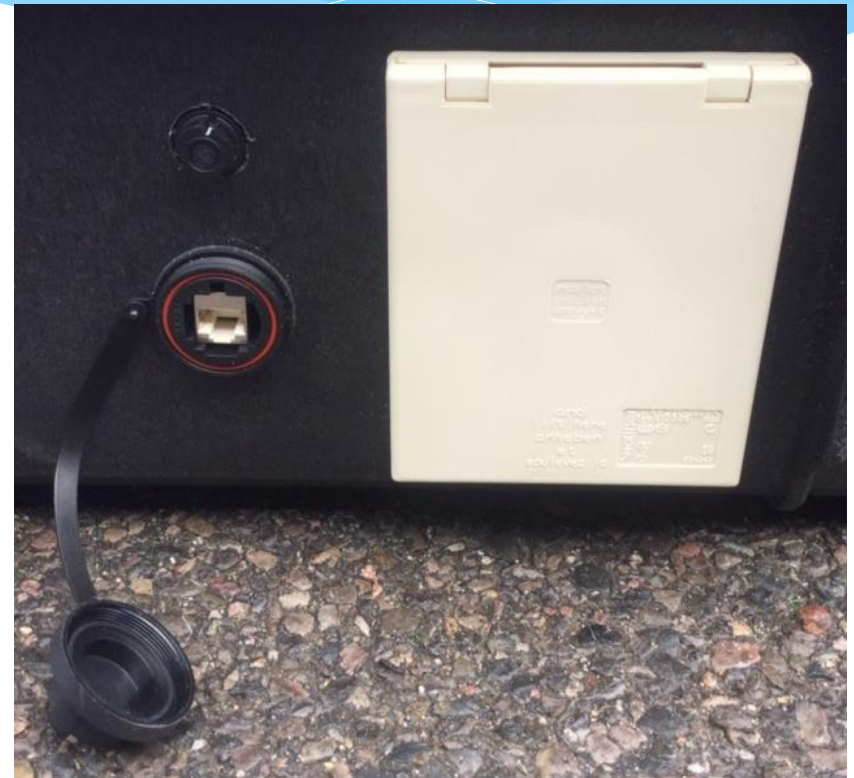
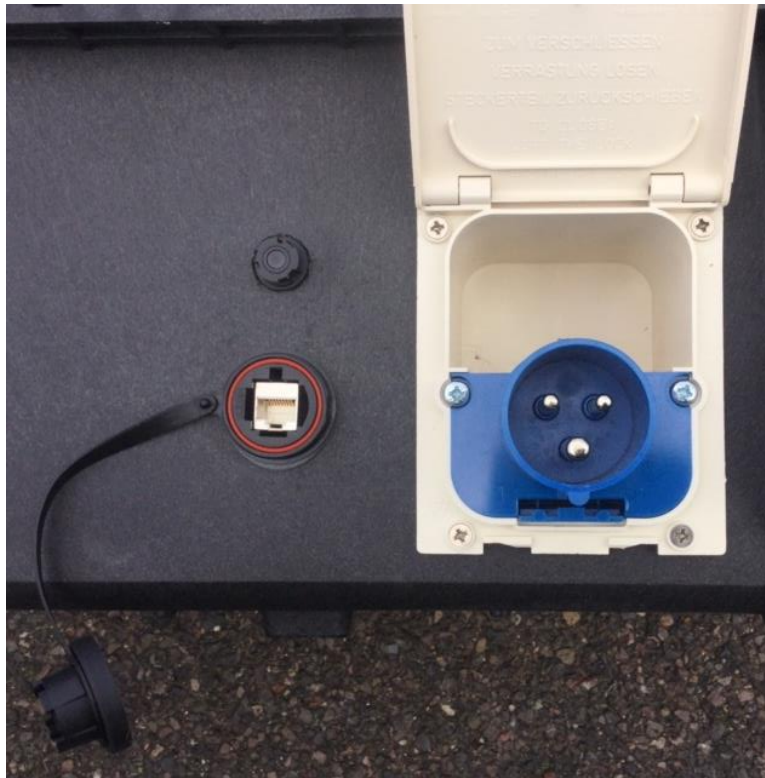
- * This is local display you will see on your android or IOS device within 20m-50m of WeatherFile Mobile Unit



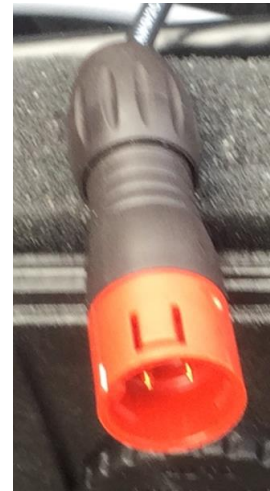
Durable IP rated case with foam padding



Plug in IP rated sockets



IP rated plugs and sockets



Purchase Quotation

System 2 Festival/Event	Cost ex VAT
Gill WindSonic 1 Sensor	£ 640.00
Case, mast, cables, connectors, sockets, plugs	£ 953.29
WeatherFile Communication Unit (WCU)* GSM cellular / LAN	£ 544.13
Total ex VAT	£ 2,137.42
* Customer supplying SIM card	



Hire/Rental Quotation

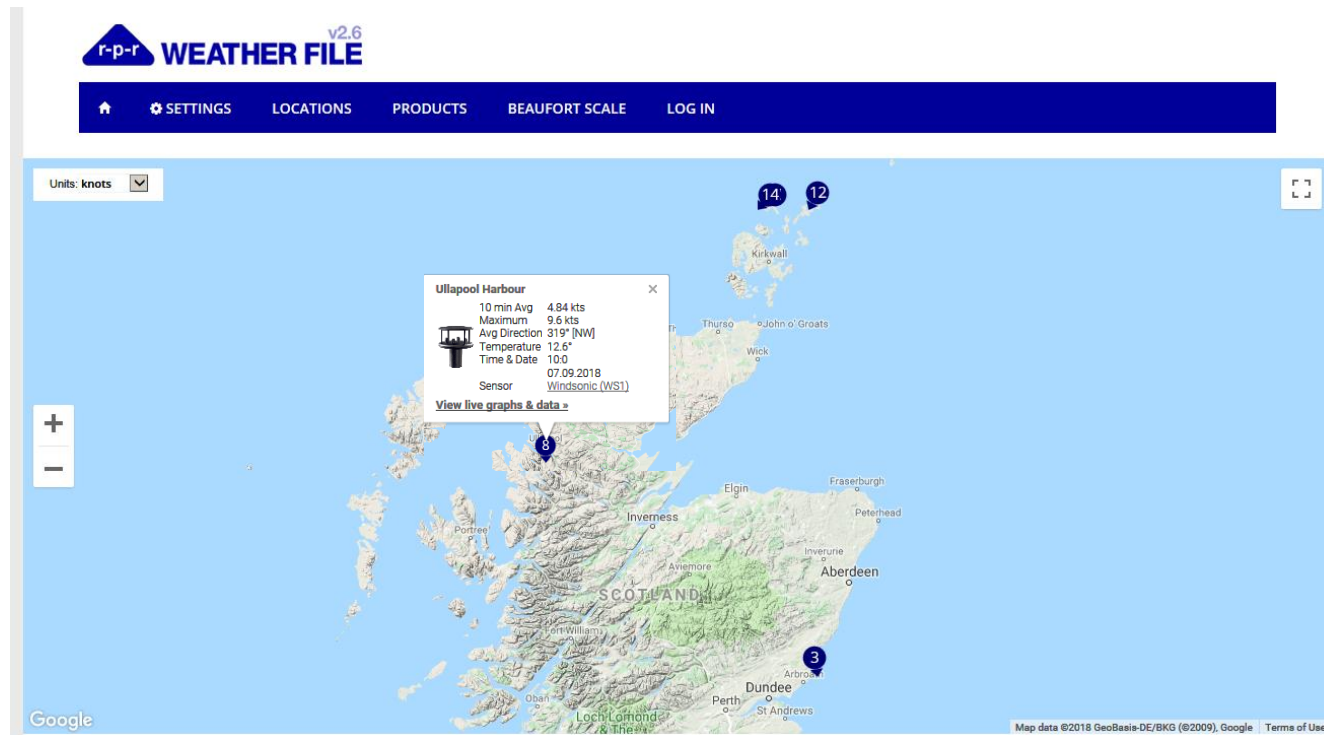
	Cost ex VAT
1 week lease (7 days continuous)	£ 225.00
2 week lease (14 days continuous)	£ 450.00
4 week lease (31 days continuous)	£ 800.00
Shipping to event	£ 24.78
Customer pays return shipping	
Note: Full deposit applies. Customer pays £2137.42 ex VAT up front. RPR Ltd credit back once returned	



**RICHARD PAUL
RUSSELL LTD**

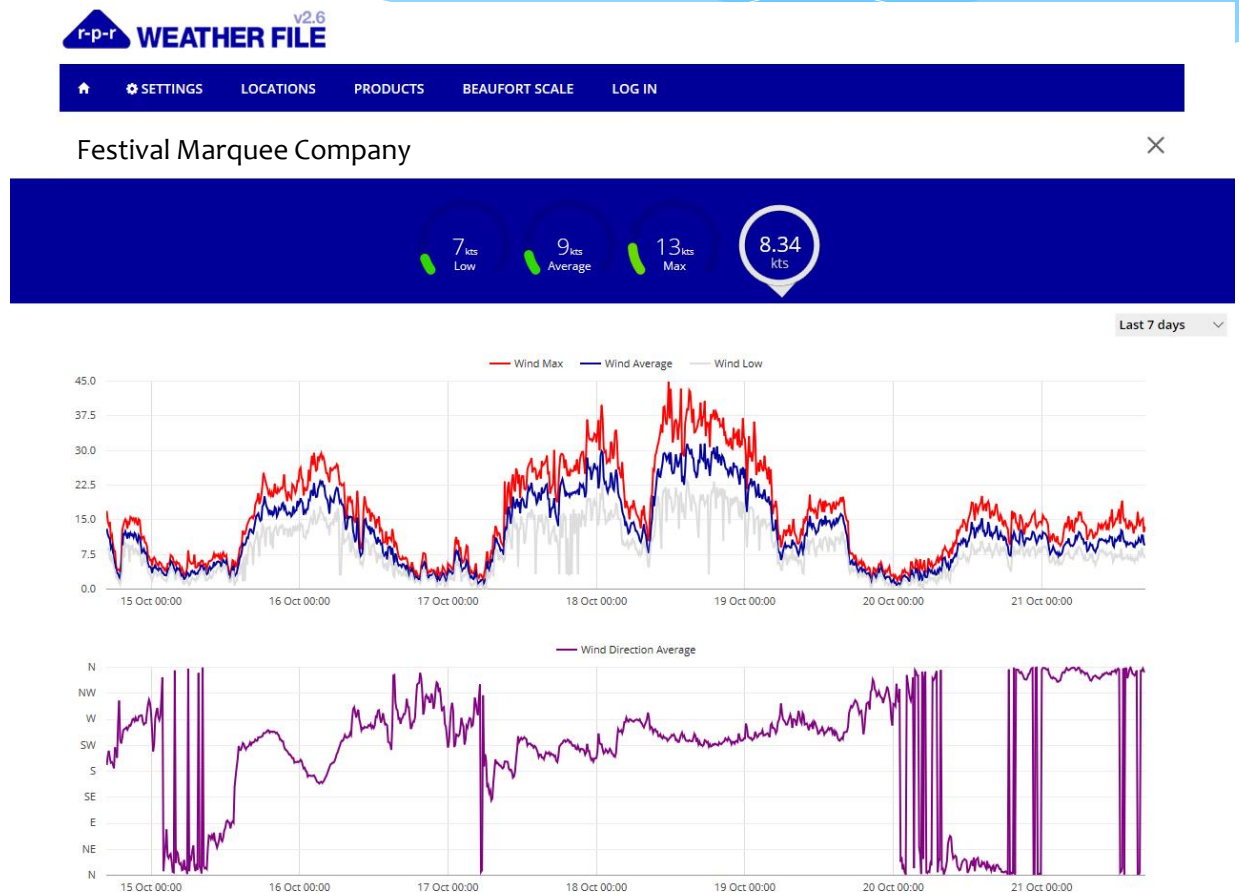
Website Page Views (Home Page)

- * WeatherFile home page will auto to your geographical area
- * Hover on icon and will show local live data

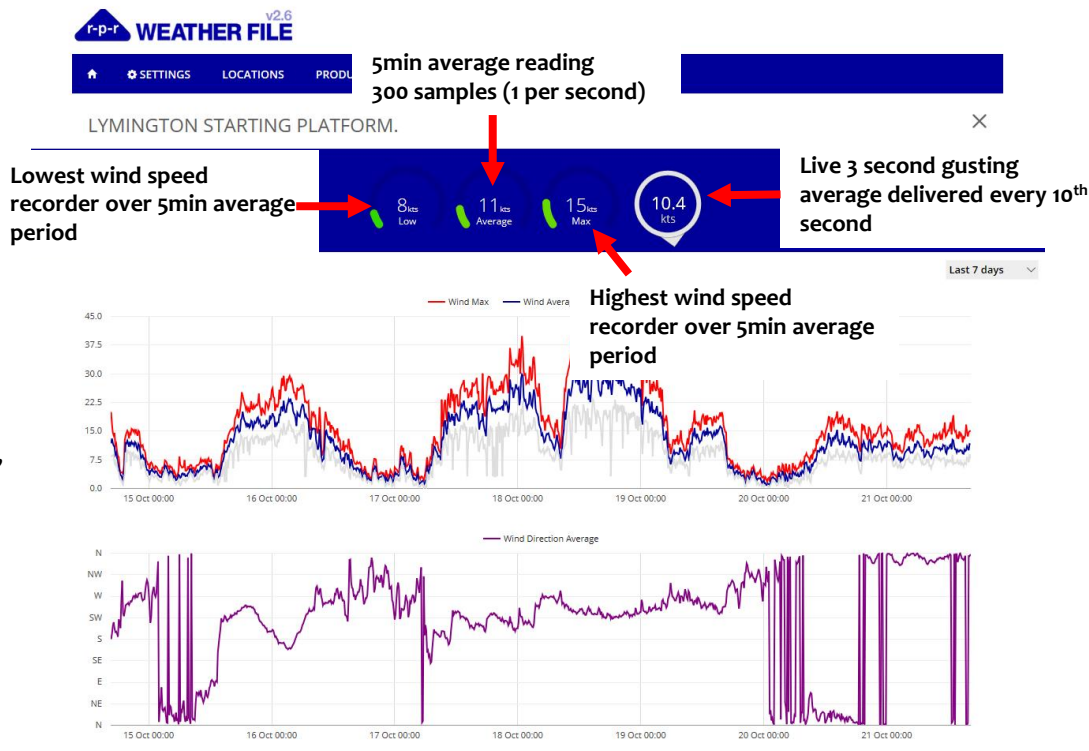


Website Page View (Location Page)

* Each location has its own data page



Website Page Views (Location Page) cont'd



Website Page Views (Location Page) cont'd

Lowest wind speed
recorder over 5min average
period

5min average reading
300 samples (1 per second)

Highest wind speed
recorder over 5min average
period

Wind direction data

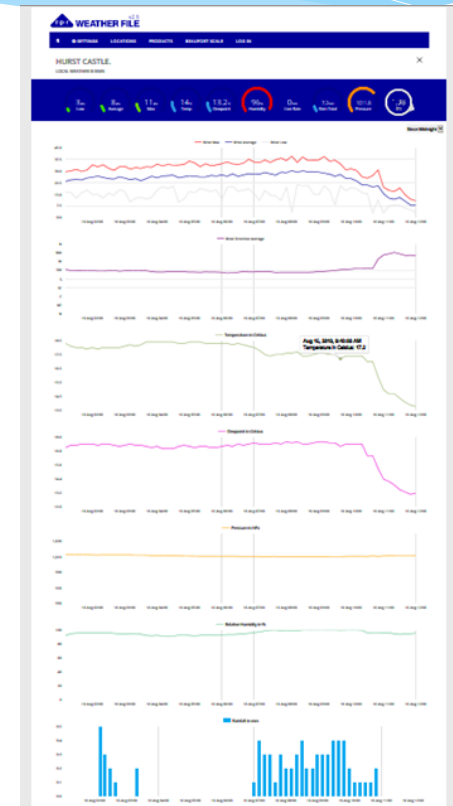
Date and time stamp

Date	Time	Wind Low	Wind Avg	Wind Max	Avg Direction	Backed	Veered
24 Apr	10:10	8	10	13	S (165°)	135°	194°
24 Apr	10:00	6	10	16	S (172°)	132°	194°
24 Apr	09:50	5	8	14	SE (145°)	126°	174°
24 Apr	09:40	4	6	9	E (95°)	60°	162°
24 Apr	09:30	8	9	11	E (70°)	62°	81°
24 Apr	09:20	6	8	10	NE (67°)	57°	77°
24 Apr	09:10	7	9	11	NE (56°)	45°	70°
24 Apr	09:00	7	9	11	NE (56°)	46°	67°
24 Apr	08:50	7	9	11	NE (57°)	46°	68°
24 Apr	08:40	7	9	10	NE (61°)	50°	69°
24 Apr	08:30	7	9	10	E (72°)	61°	80°
24 Apr	08:20	8	10	11	E (75°)	66°	83°
24 Apr	08:10	7	9	10	E (75°)	68°	81°
24 Apr	08:00	7	9	11	E (74°)	66°	82°
24 Apr	07:50	7	9	11	NE (67°)	56°	78°
24 Apr	07:40	9	10	12	NE (67°)	55°	76°
24 Apr	07:30	8	10	11	NE (64°)	55°	81°
24 Apr	07:20	7	9	12	NE (62°)	49°	74°
24 Apr	07:10	7	9	11	E (71°)	61°	80°
24 Apr	07:00	6	8	9	E (60°)	61°	80°

Data

- * Graph data with user selected time periods
- * Data download in CSV (Excel) format for graphing, analysis and reporting
- * .CSV (Excel) data download is based on 5 minute average, 1 reading per second, 300 samples make up the 5 minute average

Time Stamp	Unit Name	Date	Time	wdb	wda	wdv	wsl	wsa	wsh	smp	hpa	hum	ta	td	prr	a1	a2	d1	vlt	createts	pos	sol	pt
02/07/2018 00:00	GBR00002	02/07/2018	00:00:00	8	20	36	3.9	6.05	7.52	600	1009.7	64.8	21.4	14.6						11.7	02/07/2018 01:00	50.706226, -1.553524	0
02/07/2018 00:10	GBR00002	02/07/2018	00:10:00	11	22	35	3.99	5.49	6.94	600	1009.7	63.2	21.5	14.3						11.7	02/07/2018 01:10	50.706226, -1.553524	0
02/07/2018 00:20	GBR00002	02/07/2018	00:20:00	12	21	36	3.68	5.19	6.21	600	1009.7	64.3	21.3	14.4						11.7	02/07/2018 01:20	50.706226, -1.553524	0
02/07/2018 00:30	GBR00002	02/07/2018	00:30:00	12	25	41	2.95	5.66	7.16	601	1009.8	63	21.5	14.2						11.7	02/07/2018 01:30	50.706226, -1.553524	0
02/07/2018 00:40	GBR00002	02/07/2018	00:40:00	11	25	53	3.18	5.75	7.23	600	1009.8	63.3	21.6	14.4						11.7	02/07/2018 01:40	50.706226, -1.553524	0
02/07/2018 00:50	GBR00002	02/07/2018	00:50:00	8	25	55	2.84	5.67	7.02	600	1009.9	63.1	21.4	14.2						11.7	02/07/2018 01:50	50.706226, -1.553524	0
02/07/2018 01:00	GBR00002	02/07/2018	01:00:00	1	26	55	3.28	5.7	6.95	600	1009.9	62.6	21.3	14						11.7	02/07/2018 02:00	50.706226, -1.553524	0
02/07/2018 01:10	GBR00002	02/07/2018	01:10:00	14	26	40	4.28	5.61	6.97	600	1010	63.6	21.2	14.1						11.7	02/07/2018 02:10	50.706226, -1.553524	0
02/07/2018 01:20	GBR00002	02/07/2018	01:20:00	10	24	53	3.16	4.91	6.27	600	1010.1	65.7	20.9	14.4						11.7	02/07/2018 02:20	50.706226, -1.553524	0
02/07/2018 01:30	GBR00002	02/07/2018	01:30:00	10	25	65	2	4.6	5.85	599	1010.1	65.1	21	14.3						11.7	02/07/2018 02:30	50.706226, -1.553524	0
02/07/2018 01:40	GBR00002	02/07/2018	01:40:00	10	24	37	2.94	4.19	5.58	600	1010.1	66.3	20.9	14.5						11.7	02/07/2018 02:40	50.706226, -1.553524	0



**RICHARD PAUL
RUSSELL LTD**

Contact Details

- * Contact: David Ellis, Sales and Marketing Director
- * Richard Paul Russell Ltd, The Lodge, Unit 1 Barnes Farm Business Park, Barnes Lane, Milford on Sea, SO41 0AP
- * Tel: +44 (0) 1590 641223
- * Email: david@r-p-r.co.uk
- * Website: www.r-p-r.co.uk



**RICHARD PAUL
RUSSELL LTD**