Kipp & Zonen
SINCE 1830

NEWSLETTER

Introduction of the METEON

Kipp & Zonen Award 2007

World Solar Challenge

SUMMER 2007

KNOWLEDGE INNOVATION PASSION PERFORMANCE

Back again, after many years of absence: The Kipp & Zonen Newsletter

In 2006 we moved to a new modern facility at the Delft Technology Park and upgraded ourselves to a higher level in staff, resources, technology and systems; resulting in the introduction of our new CMA, CMP and CGR ranges of instruments and the unique CNR 2 Net Radiometer.

Many times we have been asked to resume the Kipp Newsletter. In May this year Kelly Dalu-Karlas joined Kipp & Zonen as our Marketing Communication Specialist. With her expertise we are ready to regularly inform you on our news and activities in two ways; E-news by e-mail with short updates and links to our website and by a Newsletter, in both print and PDF, containing more in-depth articles and background information. I feel excited that we have finally reached this level of communication and have a strong belief that we will create an excellent platform for interaction between you, our valued end-users, and the Kipp & Zonen staff.

Over the last ten years the company has seen strong growth, not only supported by developments in climatology, but also in agriculture meteorology and in the industrial market. Another element supporting this growth is the expansion of our portfolio with new and updated products within the current ranges and also completely new additions, such as world-wide exclusivity in marketing and selling the Raymetrics Lidar Systems.

In this and future newsletters, published 4 times a year, we will keep you updated on our news, activities, innovations, products and applications, supported by articles and studies.
I hope you will enjoy reading this first issue of our Newsletter.

With best regards,

Ben Dieterink, President

If you have a news item for the news letter or want to share your experiences with Kipp & Zonen applications and contribute to our next issues, please e-mail the editor: Kelly.Dalu@kippzonen.com

THIS ISSUE

Introducing the new hand-held display unit: The METEON

The latest addition to the Kipp & Zonen product portfolio, METEON is primarily intended to display real-time radiation values in Watt per square meter or PAR in micro Mol per square meter per second. The integrated data logging function can store up to 3500 samples.

It stores minimum, maximum and average values per logging interval. The light weight, small size and long battery life make it ideal for many field, test and demonstration applications.

METEON runs on two standard AA type batteries for more than 1200 hours. The radiometer sensitivity is programmed for a direct display of the radiation in the correct engineering unit. METEON comes in a convenient carrying case that holds the display unit, a radiometer and the cables for sensor and USB connection.

METEON has an accurate micro-Volt amplifier that correctly matches the output of all Kipp & Zonen CMP Series Pyranometers. The CM 4, PAR Lite, SP Lite, NR Lite and CUV 4 can also be connected. The software enables configuration for the connected radiometer and download of the stored measurements to a PC. Reading the logger's memory will not interfere with the logging process. The downloaded data is presented as a chart with possibilities to change the scale.

To connect a radiometer METEON has two 4 mm sockets which can accept banana plugs or bare wires. The ON / OFF button is located next to the inputs and recessed to prevent accidentally switching the unit off.

The software allows easy selection of the sensor type from a list. Just enter its sensitivity and the correct measuring range is automatically selected.

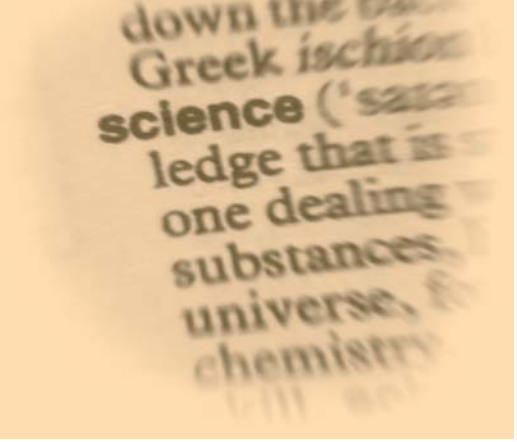
When the logged data is transferred to the PC via the USB cable, it can be presented graphically. The scaling of the graph can be user defined or set to automatic. Minimum, maximum and average values are presented in different colors.

The data can be exported in text format for use in a spreadsheet program such as Microsoft Excel®. A print button allows a full page screen copy of the graphical data. The copy button is used to transfer the graph to the clipboard for use in other programs, for example Microsoft Word®. The METEON software has delay function to

postpone the start of the logging process until the METEON is on site. This saves memory space and restricts the log to meaningful data.

Applications for METEON include PAR measurements in greenhouses and a direct check of the radiation load for industrial use. In photo-voltaic and solar collector systems it can be used for checking efficiency and it is ideal for educational and demonstration purposes.

METEON is the perfect tool for convenient use in the field and is available from the 1st of September More details and specifications on the METEON will be published on our website soon.

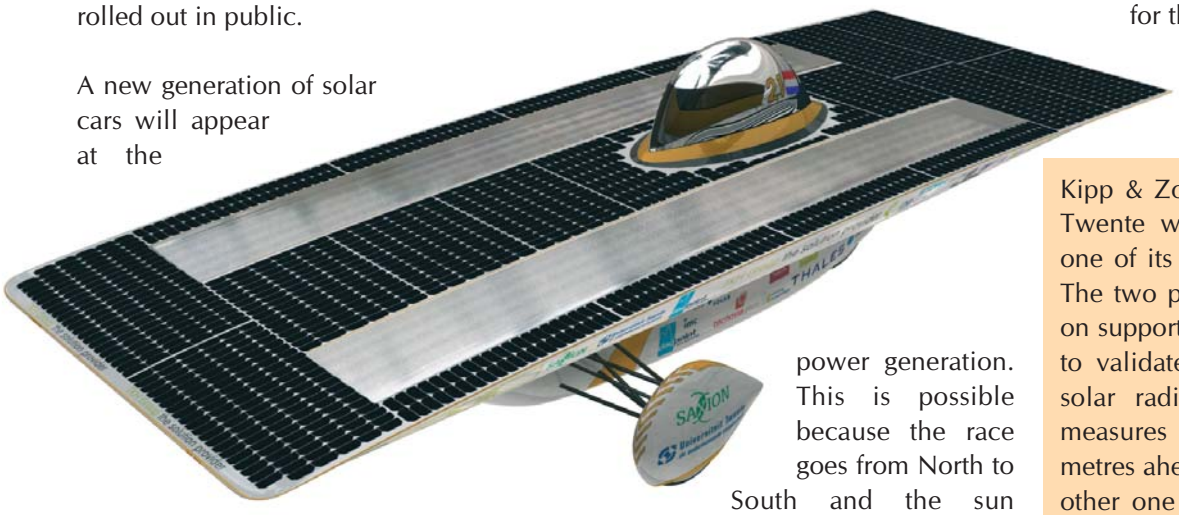


New Generation Of Solar Cars At The World Solar Challenge

The Panasonic World Solar Challenge is scheduled to take place in October this year. The Challenge is a prestigious race across Australia from North to South for vehicles fuelled exclusively by solar energy. The race lays the foundations for future developments in the field of renewable energy.
Sixteen students from the Saxion Colleges and the University of Twente, The Netherlands, form Solar Team Twente.

Together with the business community, government, research and educational institutions, Solar Team Twente have been preparing for the World Solar Challenge for over half a year. The team will strive to finish at least in the top three. The pioneering technical design has been presented and everyone is now focussed on the production of the car. By the end of July the car will be rolled out in public.

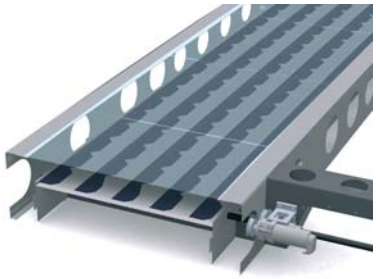
A new generation of solar cars will appear at the start of the 2007 World Solar Challenge. This is due to two large regulation modifications. The seated angle of the driver must be at least 27 degrees and the result is a completely different appearance of the cars. Secondly the allowable solar cell area has been reduced to a maximum of 6 m^2. This makes it impossible for the teams to fill the complete surface of the car with solar cells. The idea behind the changes is to take a first step towards the requirements of a conventional car and to slow down the competitors.



The design is a fine piece of engineering. Two innovative techniques were implemented in order to give a serious chance of making it onto the podium at the finish. Firstly, the solar panels have been made to tilt in order to track the sun's rays, so that light reaches the solar cells perpendicularly for longer periods of the day and therefore increases power generation. This is possible because the race goes from North to South and the sun moves from East to West.

Secondly, an ingenious light concentration system has been implemented using 'Fresnel' lenses to focus the sun's energy onto the solar cells. These Fresnel lenses have a focal line instead of a focal point, which enlarges the effective radiating surface projected onto the limited solar cell area of 6 m^2. This provides more incoming power.

However, the solar cells are placed at a fixed distance from the lenses and the beam direction is changing as the sun is moving across the sky, at some point the beam will become out of focus and eventually miss the cells completely. To prevent this effect a translation system is built in. This enables the cells to move



underneath the lenses so that the focused beam always reaches the cells. A patent is currently pending for the working mechanisms of this invention.

Kipp & Zonen sponsors Solar Team Twente with CMP 6 Pyranometers, one of its most successful products. The two pyranometers are mounted on support vehicles and will be used to validate the predicted values of solar radiation. One pyranometer measures the radiation a few kilometres ahead of the solar car and the other one is directly behind it. We expect that these insights will contribute to a winning race strategy. Kipp & Zonen similarly sponsors the Nuon Solar Team of Delft Technical University, the overall winner of the past three races.
We wish both teams all the best of luck and a lot of solar radiation during the Panasonic World Solar Challenge 2007!

Launch of a new hand held display unit: The METEON

Working on-site creates the need for a simple read-out device that is small and hand-held, so that you can directly read the output of a measurement sensor in the correct units.

METEON is a read-out device that directly displays solar radiation data in Watts per square meter (W/m2) or PAR values in micro-Mols per square meter per second (μmol/m2.s) from Kipp & Zonen radiometers. The great advantage of the METEON is the integrated data logging function that can store up to 3500 samples.

The accurate micro-Volt amplifier accepts inputs from Kipp & Zonen instruments such as CMP Pyranometers, PAR Lite, SP Lite, NR lite, CUV 4 and even the CM 4 High Temperature Pyranometer.

The software enables configuration for the connected radiometer and download of the stored measurements to a PC, where the data is presented as a chart with possibilities to change the scale.

Read more on page 5.

LIDAR workshop Ilha Bela, Brazil

In June the 4th Workshop on Lidar Measurements in Latin America was held on the island of Ilha Bella in the state of São Paulo, Brazil.
The goal of this workshop is to promote co-operation between the Latin American scientific communities involved with LIDAR applications. Participants from Central and South America, the USA and Europe discussed recent developments in LIDAR measurement technology and future projects. Apart from established scientists, students also attended the workshop. It is considered an important function of these meetings to provide these researchers of the future with an insight into LIDAR technology.

Kipp & Zonen together with their local representative, Campbell Scientific do Brasil attended and sponsored the workshop. Martin Veenstra, Product Manager for LIDAR Systems gave a presentation on the current products from Raymetrics and the development of a new innovative scanning LIDAR system.

Meet Us At DACH 10 -14 September 2007

DACH 2007 is a congress organized by the German (DMG), Swiss (SGM) and Austrian (ÖMG) Meteorological Societies as a joint platform for all scientists working in Meteorology and related sciences.
Kipp & Zonen will present its wide range of high quality measurement instruments varying from the CMP 11 Secondary Standard Pyranometer to innovative turn-key LIDAR Systems.

At the Sensor + Test

From May 22nd to 24th Kipp & Zonen successfully participated in Sensor + Test 2007 in Nürnberg, Germany. This exhibition covers the entire spectrum of measuring and testing expertise in a comprehensive and cross-industry way that is not equalled by any other event.

At a shared booth with our German distributor, Gengenbach Messtechnik, various instruments were on display including Pyranometers, Pyrgeometers and the CSD 3 Sunshine Duration Sensor.

For the first time, Kipp & Zonen presented a demonstration weather station with Mierij Meteo instruments. This generated a lot of attention from people who are active in the fields of renewable energy, material testing and of course meteorology.

There was a significant increase in visitors to our booth this year compared with 2006. This indicates a growing interest in Kipp & Zonen and Mierij Meteo instruments in the test and measurement market, which is very promising for future exhibitions and the development of sales.

On-site with Dilus Instrumentacion y Sistemas S.A. in Spain

The decision by INM, the National Meteorological Institute of Spain, to approve Kipp & Zonen products as the solar radiometer instrumentation for its climatological, synoptic and radiometric networks, has been the key to strengthening our position in the Spanish market.

In 2001 Dilus Instrumentacion y Sistemas S.A. our distributor in Spain, obtained the first contract with INM to update the national Radiometric Radiation Network (RRN), which dated from 1974; replacing the old CM 5 pyranometer, Shadow Rings and NIP Pyrheliometers with automatic sun trackers and updated instrumen-tation.

So far INM has installed over 40 units of the 2AP Sun Tracker, 35 CG(R) 4 Pyrgeometers, 70 CM(P) 21 Pyranometers and 35 CH 1 Pyrheliometers. This remodelling was executed in various turn-key projects by Dilus, who also developed a system of tailor-made data acquisition systems capable of fulfilling the requirements of the Baseline Surface Radiation Network (BSRN).

Currently Dilus is providing the spare parts and support for the maintenance of the RRN and is preparing a training course that will be given by specialized staff from Kipp & Zonen and Dilus. This will train INM technicians in the maintenance, calibration and repair of the equipment and teach them how to update the previous equipment to the current specifications.

DILUS
Instrumentación y Sistemas S.A.

In recent years the interest in renewable energy resources has grown enormously in the Spanish market, in particular solar energy. Dilus has actively responded to the growing demand of equipment for "solar gardens" and have provided and installed more than 30 Kipp & Zonen systems for global, direct and diffuse solar radiation measurements with automatic sun trackers. Customers include Molinos del Ebro, Endesa, Iberdrola, Solucar, Enhol, institutions such as CIEMAT-PSA, ENER and several Universities.

Dilus Instrumentacion y Sistemas S.A was founded in the eighties with the purpose of commercialising meteorological, climatological, and environmental instrumentation to private and public costumers and has been the exclusive representative of Kipp & Zonen in Spain for more than 15 years.

By developing links with key customers, a close relationship with the manufacturer, providing excellent customer support and taking advantage of new market opportunities, Dilus and Kipp & Zonen are achieving great success in Spain.

Mr. Emilio de Ugarte, General Manager of Dilus Instrumentacion y Sistemas S.A.

A Day with Retired Colleagues

In June a group of retired Kipp & Zonen colleagues visited our new location to see the facilities and products and the changes that Kipp & Zonen has gone through over the years.
So much has changed, not just the building and surroundings, but also for example in engineering. In the old days 5 people would work on engineering a new idea and everything was drawn by hand. Today, just 1 person does the same work in the same time by using CAD-software. The older generation was also very

The Kipp & Zonen Award for Boundary Layer Meteorology 2007

Building a tradition, the 3rd Kipp & Zonen Award for Boundary Layer Meteorology is planned to be granted during the Annual Meeting of the European Meteorological Society (EMS) which will again be held together with the European Conference on Applications of Meteorology (ECAM). The 7th EMS will take place in San Lorenzo de El Escorial, Spain from 1st to 5th of October 2007.

Every year the Selection Committee, consisting of the Chair of the EMS Awards Committee, a representative from Kipp & Zonen and a Member of the Conference's Scientific Committee, grants the Kipp & Zonen Award to an aspiring young scientist presenting an outstanding research paper on Boundary Layer Meteorology at the conference. The award consists of prize money of €1000 and expenses for travel and accommodation.

We are looking for candidates who wish to apply for the prestigious Kipp & Zonen Award 2007 and follow on from last year's winner, Jan Cermark from the University of Marburg in Germany. He was presented with the award for his study "SOFOS, A new Satellite-based Operational Fog Observation Scheme".

The following requirements apply:

1. Candidates can come from any country.
2. Candidates shall be under 35 years of age on the first of January 2007.
3. The Award shall be given to a scientist presenting an excellent paper at the 7th EMS Annual Meeting / ECAM conference.
4. The encouraged field of research is Boundary Layer Meteorology specifically related to solar radiation (UV, Visible or FIR) and its direct effects.
5. Proposals shall be submitted to the EMS Secretariat at: ems-sec@met.fu-berlin.de
6. Candidates may propose themselves, be proposed by the scientific committee of the conference or be proposed by a convener of a session at the conference.
7. The closing date for applications is August 31st 2007.
8. The Awards Committee selection shall be based on the following documentation

(I) a short curriculum vitae,
(II) proof of the age of the candidate,
(III) a supporting statement (e.g. by a convener at the conference or by the programme committee),
(IV) a copy of the letter of acceptance for an oral or poster presentation at the conference,
(V) the abstract submitted to the conference.

More information can be found at www.emetsoc.org

impressed by the latest product range, including turn-key systems like the LIDAR, and the numerous developments such as in detectors and domes. It was a day to remember and everyone agreed "It has been too long since we've met"!

Expanding our horizons with Mierij Meteo Nederland

On the 1st November 2006 Kipp & Zonen acquired the Dutch company Mierij Meteo Nederland B.V. (MMN) based in de Bilt. De Bilt is well known as the home of the weather forecasts in the Netherlands and is the headquarters of KNMI, the Royal Dutch Meteorological Institute.

Mierij Meteo
METEO SYSTEMS

MMN was founded in May 1982 and celebrates its 25th anniversary this year. The company has 16 employees and is a leading full service supplier of meteorological stations, wind monitoring stations and climate monitoring stations for road safety in The Netherlands and Belgium. For example MMN fully services 300 stations along the Dutch main roads and motorways, identifying and monitoring road surface icing. A recent project is the 116 meters high tower in the North Sea Wind Energy Park that monitors wind.

MMN produces a wide range of meteorological sensors including Research, Industrial and Basic grade instruments for wind speed and direction; and the unique solid state wind sensor MMW 005. A special MMN newsletter will be published with a list of instruments and specification details. In the meantime please visit the Mierij Meteo website for more information www.mierijmeteo.nl

"Science is organized knowledge"

(Herbert Spencer 1820-1903)

KNOWLEDGE INNOVATION PASSION PERFORMANCE

Knowledge is one of our key values.

The history of Kipp & Zonen dates back to 1830. Over the years a comprehensive portfolio of innovative instruments was built up through products such as the world famous Kipp Gas Generator and the original Moll-Gorczynski Pyranometer of 1927.

This history of excellence forms the foundation of expertise within the company that today is focussed on Solar Radiation Measurement and Atmospheric Science Instrumentation.

We continuously expand our knowledge-base by close links with the scientific community and research institutes, by interacting with our customers, and by entering partnerships with specialist equipment manufacturers. In this way we increase our awareness of future opportunities, customer needs, and technologies that provide solutions founded on proven scientific principles.

From this depth of knowledge we develop new products, serve our customers and meet our markets' demands and expectations.

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