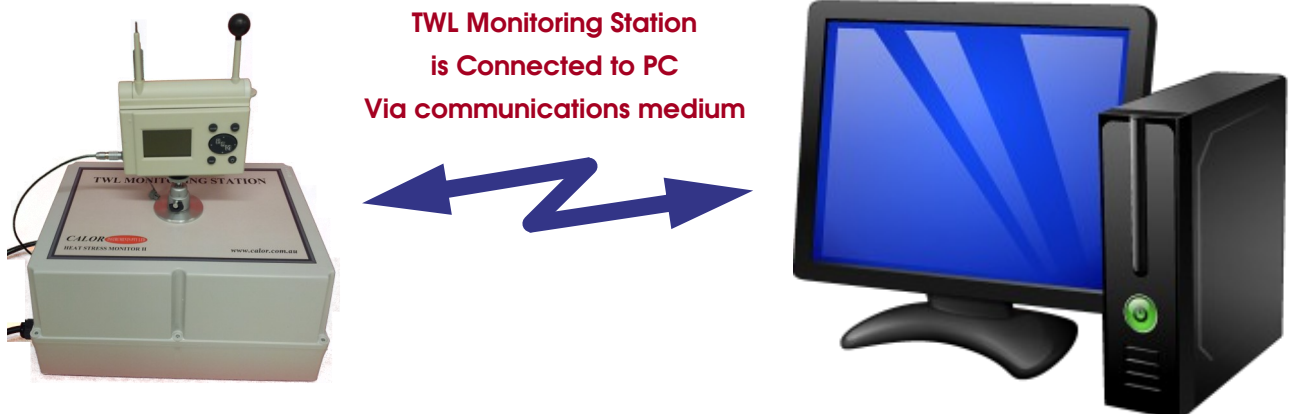


## TWL Monitoring Station

- The TWL Monitoring Station enhances an HSM by periodically sending environmental readings to the TWL Monitoring Station PC software.
- Every 6 minutes, data is collected by the HSM. From this the TWL is calculated and the results, along with the variable sensor values, are made available to the monitoring PC.
- Readings taken are humidity, wind speed and other environmental parameters / variables from which the TWL is calculated
- The Calor TWL Monitoring Station provides site-wide notifications of a change in TWL. The TWL Monitoring Station will email / SMS a predetermined list of recipients, should the TWL move into or out-of a zone.
- The TWL Monitoring Station Software indicates current TWL, as well as historical trend data for all readings.
- Trends can be displayed and analysed on a daily, weekly or monthly basis
- The TWL Monitoring Station is connected to a remote PC via a suitable communications medium
- Communications integrity is continually monitored and if lost or restored an email / SMS alert is sent



The Calor HSM (Heat Stress Monitor) provides results based on the internationally recognised **TWL (Thermal Work Limit)** algorithm developed by Dr G Bates which is a revised and updated Heat Stress Model. This produces a rating for the environment where the measurements were taken.

## TWL Monitoring Station

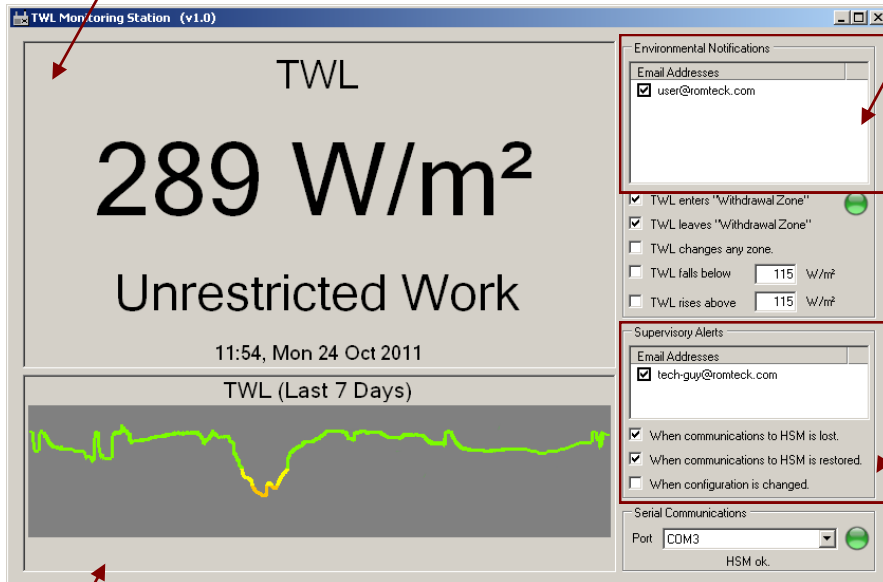
```

MONITORING
TWL: 245 W/m²
Unrestricted Work
OCT 14, 2011 15:18
Next sample in 1:50
Press QUIT to stop
    
```

TWL & Zone

Recent measurement.  
Displays the most recent TWL or other measurement from the HSM and the time it was taken.

Environmental notification configuration.  
Enter a list of email addresses to notify when the environmental conditions being monitored by the HSM change. The check boxes allow the conditions that trigger such emails to be configured. Right click on the email list for a pop-up menu for adding or removing addresses to the list.



Supervisory alerts configuration.  
Enter a list of email addresses to notify when communications to HSM is lost or restored or when someone changes any of the configuration items. The check boxes allow the conditions that trigger such emails to be configured.

Recent measurements.  
A graph of recent measurements from the HSM. Right click here for a pop-up menu that selects which measured value is shown and how far back in history the graph goes. TWL over the last 12 hours are shown by default. Event icons representing communications to HSM lost or restored as well as monitoring application started and shut down are also shown here. Hover the mouse over an area of the graph for more detailed information.

Zone	TWL (W/m²)	Recommendations
Unrestricted Work	> 220	No limits on self-paced work for educated, hydrated, acclimatised workers.
Acclimatisation Zone	220 – 140	Affects new workers or those who have been off work for more than 14 days due to illness or leave (outside the tropics), should follow the Buffer Zone recommendations.
Buffer Zone	140 – 115	Any practicable intervention to reduce heat stress should be implemented e.g. provide shade, improve ventilation etc. <ul style="list-style-type: none"> <li>Working alone should be avoided if possible.</li> <li>Un-acclimatised workers not to work in this zone.</li> <li>Fluid intake of ≥ 1 litre per hour required.</li> <li>Work-rest cycling or rotation required.</li> </ul>
Withdrawal Zone	< 115	Work limited to essential maintenance or rescue operations. <ul style="list-style-type: none"> <li>No person to work alone.</li> <li>No un-acclimatised person to work.</li> <li>Documentation required authorising work in hostile thermal conditions for specific purpose.</li> <li>Specific induction required emphasising hydration and identifying signs of heat strain.</li> <li>Apply 20 minutes work - 40 minutes rest schedule.</li> <li>Dehydration testing recommended at end of shift.</li> <li>Personal water bottle (2 litres) must be available at all times.</li> </ul>