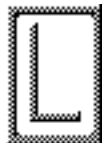


*People in Valencia, Spain, go to work early and go home late.
Low-level hourly averages of CO are plotted
from Sunday through Sunday*

CO — Valencia

Bear Facts — #47

**Often high levels are the focus of toxic air pollutant measurements.
It is comforting to know, as well, when they are within acceptable levels.**

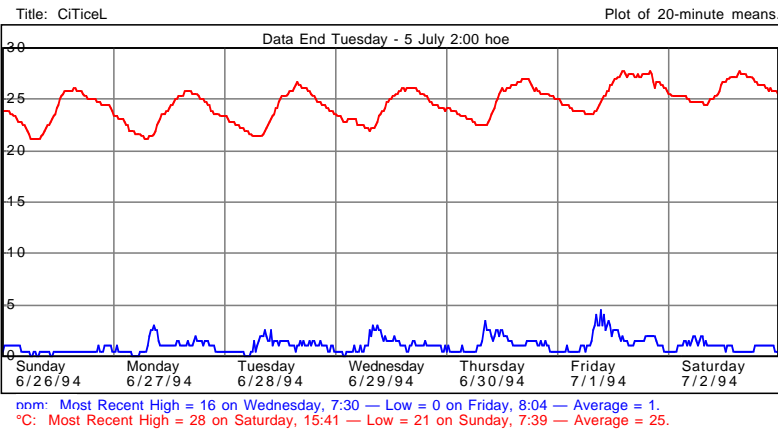


Langan Products, Inc.
2660 California Street
San Francisco, California 94115
(415) 567-8089 (voice & fax)
email: langan@sirius.com



the DataBear

Bear Facts are published to provide useful insights into the operation and applications for the DataBear™ Measurer and associated complete instruments.



Over the week, the ambient temperature rose nearly 5° C.

The same data displayed in the 3-D plot are shown in a view taken directly from SYW! and compared to ambient temperature (°C).

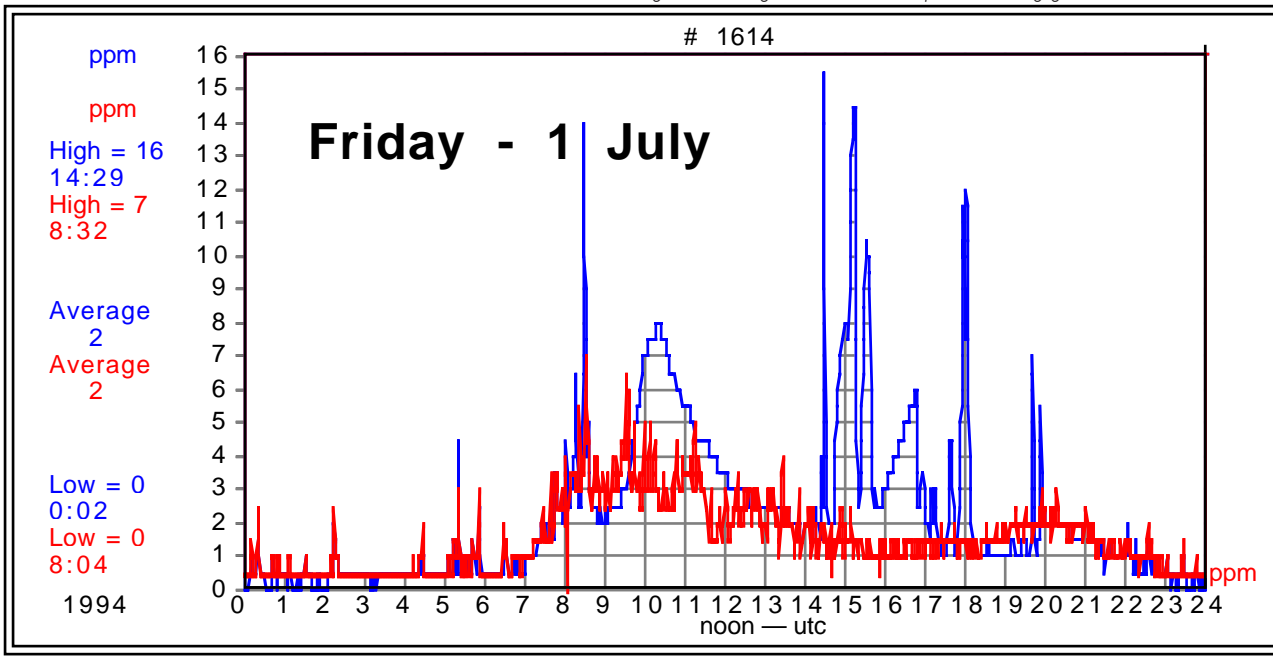
Valencia lies on the western edge of the Mediterranean Sea. This is a legendary land of oranges and Spanish courts of yore. It is also a city where people walk. It is a university city, with an agricultural base and growing light industry. The presence of a good bus system and people who live close to work results in low levels of transportation-related pollution.

During a week of Summer 1994, carbon monoxide (CO) measurements were gathered each minute in the city-center using a Langan L15 CO Personal Exposure Measurer. At the first floor level, data were measured from a window facing one of the many narrow streets. About 100 meters distant was a principle traffic corridor, but there was no direct opening to this source. The buildings in the area are about four stories high.

The plot of carbon monoxide on the opposite page was created by exporting hourly averages into a text file, from calculations made in the Sense-Your-World! (SYW!) application provided with each instrument. This file was imported into MicroSoft Excel for the 3-D plot. The process took only a few moments. 15,360 samples were clipped and condensed into 192 means for the plot. If this was done directly in the Excel spreadsheet, the process would have strained the application and taken much longer.

CO standards in the United States are an order of magnitude above these hourly data. The plot from Valencia may be compared to similar data gathered in Palo Alto, California, in 1991 (Bear Facts #19).

One day of the fixed station data are compared to CO measurements taken with an instrument carried while walking and driving about Valencia (plotted along grid).



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cut inside dotted line for small size

This Bear Facts shows data gathered in a small coastal city in Spain. Using Langan's Sense-Your-World! Macintosh Software they provide an overview of toxic air conditions resulting from traffic. The portability of the instrument allows it to be inconspicuous yet provide detailed data.