

Casella NOMAD Portable Weather Station with ALOHA/CAMEO/MARPLOT software interface

Introduction

This version of the Nomad Portable Weather system has been developed to provide a simple standalone unit for the characterization of the effect of gas and vapor releases to the atmosphere. A simple system is provided that provides quick assembly and logging of the most important weather parameters needed to predict possible outcomes of gas, fume or vapor spills in emergency situations. Data from the sensors is output in a format that will transfer directly into the popular ALOHA software and chemical data can be added from the CAMEO software.



Nomad Portable Weather Station

Key benefits

- ❑ Rapidly deployed on site
- ❑ Easily portable system
- ❑ Measures wind speed, direction, temperature and relative humidity
- ❑ Operates from solar panel or portable power source
- ❑ Outputs data to ALOHA software program
- ❑ Input chemical data from CAMEO software
- ❑ Display results in Marplot
- ❑ Calculates indoors and outdoors concentrations of chemicals
- ❑ Generation of local weather condition information
- ❑ Direct link from Nomad to pc via cable

Applications

ALOHA

(Area Locations of Hazardous Atmospheres) is a computer program that uses information, to predict how a hazardous gas cloud might disperse in the atmosphere after an accidental chemical release or other similar situations. The relevant weather data needed for these predictions comes from the Casella Nomad system that, along with physical property data from **ALOHA's** extensive chemical library, enables a better understanding of the problem to be realized.



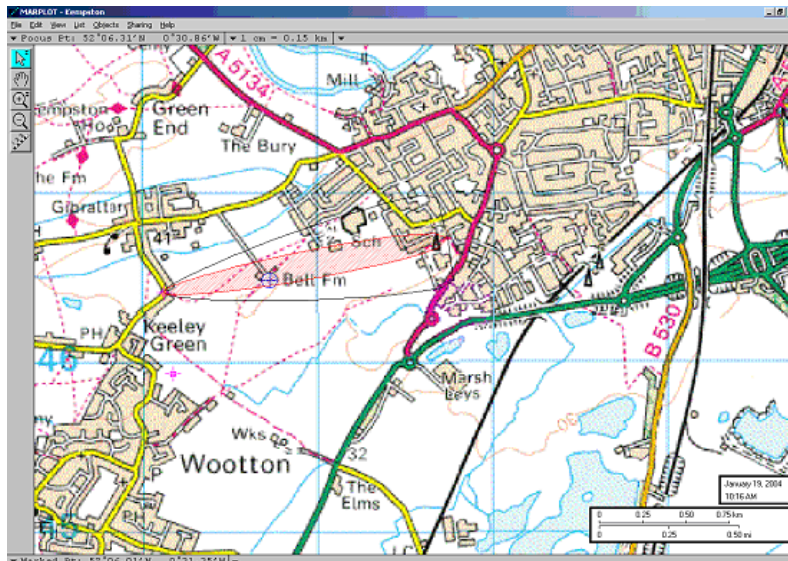
potentially hazardous vapor release into the atmosphere

ALOHA can predict rates of chemical release from broken gas pipes, leaking tanks, and evaporating puddles, and can model the dispersion of both neutrally-buoyant and heavier-than-air gases.

The air dispersion model predicts the downwind dispersion of a chemical cloud. Graphical outputs from the software include estimates of the cloud footprint (representing the areas where hazardous gas concentrations may

reach a potential level of concern), the rate and duration of release of the chemical to the atmosphere, and chemical concentration over time at locations of particular risk and concern to residents.

ALOHA can display a "footprint" plot of the area downwind of a release where concentrations may exceed a user-set threshold level. It also displays plots of source strength (release rate), concentration, and dose over time. **ALOHA** accepts weather data transmitted from the Nomad, and can plot footprints on electronic maps displayed in a companion mapping application, **MARPLOT** as in the example shown. It allows users to "see" their data (e.g., roads, facilities, schools, response assets), display this information on computer maps, and print the information on area maps. The areas contaminated by potential or actual chemical release scenarios also can be overlaid on the maps to determine potential impacts.



MARPLOT (*Mapping Applications for Response, Planning, and Local Operational Tasks*) is the mapping application within **ALOHA** allowing users to see "footprints" overlaid on a local map

CAMEO

(Computer Aided Management of Emergency Operations) **CAMEO's** chemical database contains response recommendations for about 6,000 chemicals. It also contains 80,000 chemical synonyms and identification numbers, which can be quickly searched to identify unknown substances during an incident. Each one is linked to chemical-specific information on fire and explosive hazards, health hazards, firefighting techniques, cleanup procedures, and protective clothing. **CAMEO** also contains basic information on facilities that store chemicals, on the inventory of chemicals at the facility (Tier II) and on

emergency planning resources. Additionally, there are templates where users can store EPCRA (Emergency Planning and Community Right-to-Know Act) information. **CAMEO** connects the planner or emergency responder with critical information to identify unknown substances during an incident. Once a chemical is identified, **CAMEO** provides firefighting and spill response recommendations, physical properties, health hazards, and first aid guidance. Rapid action by firefighter, police, and other emergency response personnel often is severely hampered by lack of accurate information on the substance spilled and safe response actions.

Emergency planners lack a tool to store and easily use information that is essential for emergency planning. **CAMEO** was selected by the United Nations Environment Program as a tool for helping developing nations prepare for and respond to chemical accidents, and is part of the UNEP's Awareness and Preparedness for Emergencies at the Local Level (APPELL) program. **CAMEO** software is available for both the PC and Mac operating systems and can be obtained from the US EPA web site free of charge at the following url address:-

"<http://www.epa.gov/ceppo/cameo/reqform.htm>"

Ordering information

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Nomad Portable Weather Station with 4 standard sensors for wind speed, direction, temperature and relative humidity measurements, data logger and solar panel contained in 2 carrying cases for field use with interface to ALOHA/CAMEO/MARPLOT software