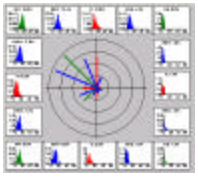
Nomad Desktop Software

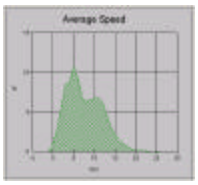
Nomad Desktop is a suite of software tools that work with NOMAD 2 wind resource assessment data loggers. Use Nomad Desktop to configure the NOMAD 2, exchange files with the NOMAD 2, view real-time data remotely, analyze data with reports and graphs, and export data to other applications.

Graphs and Reports

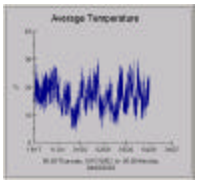


Wind Rose Graph
A Wind Rose Graph is a radial graph of the frequency of occurrence of winds by point of compass. Use this graph to see where the wind energy at your site is coming from. The Wind Rose is surrounded by 16 wind speed distribution graphs, one corresponding to each bar on the wind rose, showing the energy of the wind from each direction in addition to the occurrence.

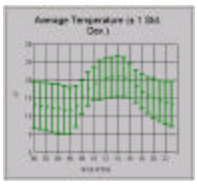
Power Curve Graph
The Power Curve Graph shows the power output of a wind turbine as a function of wind speed. This graph can plot power data from an actual turbine, or show the expected energy output based on the power curve supplied by the manufacturer. In addition to the power curve plot, this graph also displays the wind speed distribution. Power curve data can be further modified to account for the time the wind turbine was "On Line", be filtered by wind direction, and be adjusted to correct for air density.



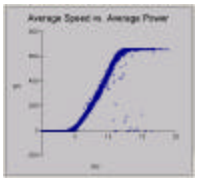
Distribution Graph
The Distribution Graph creates a frequency-of-occurrence distribution for any data track in the database. The graph can be edited by range of values, width of bins, and interpretation of the Y-axis as percentage, number of occurrences, or time.



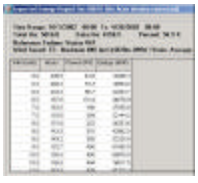
Time Series Graphs
The Time Series Graph and the Scrolling Time Series Graph plot any track in the database as a function of time. The Time Series Graph displays all of the data for a particular input on one screen. The Scrolling Time Series Graph limits the display to 144 data points at a time to show more detail, and a bar at the bottom of the plot allows you to scroll through the data. The "Hot Hits" feature allows you to click on a data point to view the value, date, and time-stamp of that point.



Diurnal Graph
The Diurnal Graph displays the diurnal trend (daily variation) of any track in the database. All data is binned by hour of day, and the high/low bars show one standard deviation around the average value. This graph shows the hourly trend of data, for example it may be noticeably windier around 3 p.m. every day.



X-Y Graph
The X-Y Graph is a scatter plot showing the relationship between any two variables. This can be used to show the correlation between two anemometers at different heights, for example, or to plot power output as a function of wind speed. The two tracks can be from the same NOMAD 2 or from two different NOMAD 2's in the database.



Expected Energy Report
The Expected Energy Report displays the the expected energy output of a wind turbine based on the wind data collected at a site. This report is similar to the Power Curve Graph, but is presented in report format. Data can be corrected for air density. The report presents a tabular format of wind speed, hours, power (kW), and energy (kWh), with totals displayed at the bottom.

SECONDWIND

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Tools

Site & Input Configuration
Configuring the NOMAD 2 data logger to collect exactly the data you need is quick and easy with Nomad Desktop. The Site & Input Configuration page allows you to identify your data with a Site Name, Latitude, Longitude, and Elevation. Set the local time of the site with the GMT Offset and Daylight Savings options. Choose from one of over 60 pre-configured wind industry sensors or enter your own input configuration. Further identify sensors with a Serial Number, Units, and Height and Azimuth on the tower. Set up tracks by selecting a function and interval from the drop-down selections.

Communication Configuration
If your NOMAD 2 has a modem installed for remote communication, use the Communication Configuration file to turn on the modem for one or two time intervals daily, set up a user name and password for security, and save the phone number of the modem to the database for one-click connection. If you would like to use the e-mail feature, enter the ISP information, up to three e-mail recipients, and the time of day to send the e-mail, and NOMAD 2 will e-mail the previous day's data file to all recipients daily.

Import Data Files into the Database
Whether data is collected by Compact Flash card, direct or remote connection to the NOMAD 2, or by e-mail, all data is imported into a single database for complete analysis. All information about the data logger (e.g. site name, location) and about the sensors (e.g. slope and offset, height, azimuth, etc.) is stored in the database and displayed on graphs and reports. The import screen will display the numer of data records added, the number of new configurations added, and the progress of the import.

Multi-Track Export
The Multi-Track Export function allows you to create a spreadsheet containing data from multiple tracks. This is a very useful tool for wind resource assessment and modeling. The data from all selected tracks is exported to a CSV format that can be read by spreadsheet programs such as Microsoft Excel. When using the Multi-Track Export function, users can choose one of 5 different averaging intervals: *None, 10 min, 20 min, 30 min* or *1 hour*.

Reference Power Curve Editor
This button launches a Reference Power Curve Editor to create, view, and adjust reference curves for use with the Power Curve Graph and the Expected Energy Report. Nomad Desktop is supplied with 67 reference turbine power curves based on manufacturer-supplied data, and for approximate predictions of energy production based on wind resource assessment that may be all you need. But for full-blown power performance testing, you have the ability to make your own reference curves based on your specific contracts, turbines, and location.

Communications

Connect to Nomad 2
Communicate with NOMAD 2 via serial cable, or choose from our AMPS, GSM, or satellite modem options. Once connected to the NOMAD 2, you can Zoom the inputs to see live data, and Zoom the NOMAD 2 to see information about the logger itself. While connected, transfer files to and from the logger including Site & Input Configuration files, Communication Configuration files, data files, System Log files, and anything else stored on the Compact Flash card.

Zoom
With the Zoom Inputs button you can view the scaled values of a connected NOMAD 2's configured inputs in real time. Use this feature to make sure your sensors are all working properly, and check on battery power. With the Zoom Nomad2 button you can view information about the logger itself, including the serial number, the latest versions of software loaded into the logger, the last time the logger was rebooted, and how much space is left on the Compact Flash card. The Zoom features can be used while connected by serial cable or by dial-up modem.

Upload and Download Files
The Download button allows you to transfer files from the Compact Flash card in a connected Nomad 2 to your computer. Although primarily used for picking up NOMAD 2 Data Files (NDF's), you can also download the System log in the Compact Flash card's root directory to look at the connected NOMAD 2's operational history, retrieve old configurations, or get any other type of file on the card.

NOMAD 2 is field upgradeable. Transfer files from your computer to the Compact Flash card in a connected NOMAD 2. With Upload you can transfer: Site & Input Configurations (N2Config.new files), Nomad Communication Configurations (N2ComCfg.new files), Time Adjustment Files (N2Time.new files), and Firmware Upgrades (N2Flash.new files). Uploading is usually the most convenient way to reconfigure remote modem-equipped NOMAD 2s. Uploading can also be used to reconfigure Direct Connected NOMAD 2s as an alternative to transferring Compact Flash cards.