

# Simplified Instructions for using the Nicolet Magna 550 IR Spectrometer

## Simplified Instructions for using the Nicolet Magna 550 IR Spectrometer with Omnic Version 3.0 Software

1. Turn on power to the computer (button located on the top-right front side of the computer), and the monitor (toggle-type switch, lower right front, under screen), and allow the computer to "warm-up." The power switch for the printer is located on the right side of its front panel.

2. The Omnic Version 3.0 software boots automatically, and the **Omnicon Window** will appear on the screen. (If for some reason you should lose this screen and accidentally exit the program, return to the **Windows Program Manager**, double-click on the **Omnicon icon** with the left mouse button, and it will reappear.)

3. Under the **Collect** menu, select **Collect Setup** using the left mouse button. This option provides you with an opportunity to set various parameters to meet your individual spectral needs (# of scans, resolution in wave numbers, etc). In most cases, the default values will be adequate. When satisfied with the settings selected, click on **OK** with the left mouse button.

4. Under the **Collect** menu, select **Optical Bench Setup** using the left mouse button, and once again, customize any of the individual parameters required to meet your specific needs. In most cases, the default values will be suitable (Example: Spectral range is normally from 4000 to 400). When satisfied with the settings selected, click on **OK** with the left mouse button.

5. Under the **Collect** menu, select **Collect Sample** using the left mouse button. A screen will appear telling you to prepare to take a background spectrum. Enter the spectrum title when prompted, or use the default option provided. At this point, the sample chamber should be empty, and the sample compartment closed and purged - refer to the **Sample Compartment Instruction Sheet** (summarized as part of this paragraph) taped to the

spectrometer to the right of the sample compartment which states that the background scan should be taken **before** the sample compartment is opened. Click on **OK** with the left mouse button and the instrument will proceed to take a background spectrum, which will subsequently appear on the screen, followed by instructions to prepare to insert your sample. To insert the sample, raise the small partially recessed handles at the left and right of the sample access sliding door on the top of the instrument in order to isolate the instrument's optical system from the sample compartment. Next, turn the latch on the lower front of the hatch cover, open the hatch, insert the sample, and close the hatch cover to seal the sample compartment tightly. Push down the two handles to restore the flow of dry air used to purge the sample compartment. Wait approximately two minutes **before** taking a spectrum of your sample to allow sufficient time for the dry filtered air to displace any moist air that may have entered the sample chamber when the compartment hatch cover was opened. Click **OK** with the left mouse button to initiate the scan process. *(If you are doing quantitative measurements and wish to avoid complications related to water absorption in the 1400-1700 and 3600-39 cm<sup>-1</sup> ranges, then allow the sample chamber to purge for at least five minutes **before** taking a spectrum of your sample. If carbon dioxide absorption around 2300 cm<sup>-1</sup> will affect quantitative work, the instrument should be flushed with grade 5 nitrogen. Be aware, however that a full tank of nitrogen will last only for a few hours at the usual flow rate used to purge the instrument/sample chamber.)*

6. When the spectrum is complete, it will appear on the screen, and you will be asked if you want to add it to Window One. Click on **Yes** with the left mouse button.

7. Under the **File** menu, click on **Save As** with the left mouse button, and give your spectrum a name in the space indicated using eight (8) characters or less, since this is a DOS-based rather than a Mac-type computer. The software will automatically provide the file extension (\*.spa) to complete the name when you click on **OK**. **If you want to save your data to a floppy disk**, follow the same procedure indicated above, but first insert a **3.5" disk (formatted for use in a PC-type computer)**, select the **A: Drive** (instead of the C: Drive where indicated on the screen), then click on **OK** with the left mouse button. This will save the information on your floppy disk rather than on the computer's internal hard drive.

8. There are several ways to customize the appearance of the spectrum on the screen. Please refer to the **Omniscan Display Features** sheet provided along with these instructions for specific details

**9** To print a hard-copy of your spectrum, first check to be certain that the **power switch** on the printer has been turned on, then choose **Print** from the **File** menu.

**10.** To exit from the Omnic control software, select **Exit** from the **File** menu using the left mouse button. This returns you to to a small window inside the Windows Program manager that contains two Omnic-related icons. Close this small window, then follow the shut-down instructions indicated below.

**11.** When finished using the instrument, please shut down the computer and monitor by following the instructions taped below the screen (**Important:** Failure to properly exit to DOS from Windows **before** turning off the computer may result in software glitches that interfere with the operation of Windows-based programs, including the Omnic V. 3,0 software, so please follow the instructions). Also, please remember to turn off the printer. **Do NOT attempt, under any circumstances, to turn off the Nicolet Magna 550 IR itself - it stays on all the time.**

**12.** If you encounter any problems when using this instrument, please contact Carl Aronson, Fran Blase, or Julio de Paula for assistance.