

## **Instructions for Using the VISCREEN Excel Spreadsheet**

**July 10, 2013**

In the "Tutorial Package for the VISCREEN Model", Chapter 7.2 has instructions for using the Viscreen Lotus 1-2-3 Spreadsheet. Lotus 1-2-3 is not used by us and a number of our community modelers. Instead, Microsoft's Excel program is widely used.

We have recreated the functionality of the original Lotus 1-2-3 spreadsheet for VISCREEN post-processing and have incorporated that functionality into an Excel file with macro support based on Microsoft's Visual Basic for Applications language.

These instructions assume that you have downloaded and unzipped the VISCREEN zip files and the Tutorial files into their own subdirectory (e.g., C:\Viscreen\Tutorial).

The following instructions are based on the Chapter 7.2 but rewritten for using VISCREEN output in an Excel environment.

### **INSTRUCTIONS FOR USING THE VISCREEN Excel SPREADSHEET**

The VISCREEN.EXE model creates two model output files. One file is a summary file which contains a formatted, tabular presentation of a brief summary of the maximum predicted visual impacts. In the Tutorial, these files commonly have an \*.SUM extension. The second file, the results file, is an unformatted ASCII array of all of the predicted visual impact results. This file was created without headings to facilitate its being imported or read by other personal computer software programs that provide capability for subsequent analysis, graphing, etc., such as the Excel spreadsheet program. In the Tutorial, these files commonly have a \*.TST extension.

VISCREEN.XLSM is an Excel spreadsheet with macros included. It is designed to format the unformatted results file created by the VISCREEN.EXE model. VISCREEN.XLSM contains several built-in programs (or macros, as they are called) that format the results output file, create graphs of the visibility parameters delta-E, green contrast, and blue-red ratio as a function of azimuth angle, and allow the input and output data to be saved and printed.

RESULTS.TST is a sample unformatted results file produced by the VISCREEN.EXE model. This file can be used as input to

test the VISCREEN.XLSM spreadsheet and macros. RESULTS.XLSM is the sample Excel spreadsheet that results from using VISCREEN.XLSM with the file RESULTS.TST.

The system requirements for using VISCREEN.XLSM are:

VISCREEN.XLSM	-- Excel spreadsheet with enabled macros
RESULTS.TST	-- sample test case input for VISCREEN.XLSM
RESULTS.XLSM	-- sample test case spreadsheet output Ready for saving and/or printing.

An IBM-compatible PC  
Excel, 2003 or higher

The followings are the instructions for using VISCREEN.XLSM, the procedure may be altered by your own expertise:

1. Execute the model VISCREEN using the VISCREEN.EXE program. VISCREEN.EXE creates two output files: a summary file and a results file. VISCREEN.EXE prompts the user to enter the paths and names of these summary and results files the model will create. For example, if these two files were named SUMMARY.TST and RESULTS.TST and were pathed to the \VISCREEN subdirectory of the user's hard disk drive named C, then the respective paths would be specified by C:\VISCREEN\SUMMARY.TST and C:\VISCREEN\RESULTS.TST. Consult your operating system manual for more information on paths and file names.
2. The XLSM extension of the VISCREEN.XLSM signifies that this file can have macros included within the file. However, because of security concerns, any macros included may not be automatically activated. The user may have to grant permission for any included macros to function. Here are a series of steps to do so:
  - a) Open Microsoft Excel
  - b) Find and click the round "Office" button in the upper left hand corner of the Excel window.
  - c) Click on Excel Options at the bottom of the resulting menu.
  - d) Click on "Trust Center" in the left hand menu frame.
  - e) Click on the "Trust Center Settings"

- f) Record your present settings
- g) Click on "Marco Settings" in the left hand menu frame.
- h) Click on "Enable all macros" and click "OK".

Note: We have not digitally signed our macros. From a security perspective, you may want to reenter here after running VISCREEN.XLSM and reset the Macro Settings to their prior setting.

Note: The XLSM extension signifies that Excel can include macros with the file. Other extensions will strip any macros from the file during the save process.

You should now have a macro enabled version of Excel running and ready to open VISCREEN.XLSM.

3. Retrieve the VISCREEN.XLSM file using Excel's File Open GUI:

**Click the "Office" button**

**Click on "Open"**

**Find and click on VISCREEN.XLSM**

**Open the file**

**At this point, you might want to save the file under a different name and preserve VISCREEN.XLSM in its original form.**

4. A set of macros have been created to populate the spreadsheet with all the necessary Titles, Labels, Units, borders, etc. A single macro, RunVis, has been programmed to execute other macros (Header, Borders, MoveData, Green, and Precept). Another macro, ClearDel, will clear the spreadsheet and allow you to repopulate it with another set of output data. Here is a table of the macros by name, module number and general purpose:

Table of Macros

Module:

No.	Name	Purpose
1	Header	Creates labels and GUI for reading in data
2	Borders	Creates borders around the labels
3	MoveData	Moves all data into place
4	Contrast	Creates the 3 Contrast & 1 ratio graphs
5	Precept	Creates the Perceptibility vs Azimuth graph
7	ClearDel	Clears and deletes data on all sheets
8	RunVis	Run macros 1 through 5

5. To activate a macro, go to the Excel menus and:

Click on View.  
Click on Macros  
Click on View Macros  
Click on RunVis  
Click on Run

At this point, the macros will be creating various sheets, Input, Output, Precept, Green, Blue, Red, BluRed, and Idents, if they do not already exist. The labels can be found in Idents. At the end of the Header run, the user will be prompted for an input data file such as RESULTS.TST. Find and select the file and click "OK". If the data is okay, a message will appear saying it found a "Viable Light of Site value" in either Cell A13 or B13. Just click okay and the other macros will run automatically.

sheet. Macros Green and Precept will access the data in Output and create graphs with corresponding names such as Green, Blue, Red, BluRed and Precept for Green, Blue, and Red Contrast versus Azimuth, a Blue-Red Ratio graph and a Preceptibility graph, respectively.

6. Without the file input prompts and the one message prompt, the macros run in less than a few seconds.
7. At this point, you will want to examine the outputs in the various sheets. Please do so and verify your data.
8. If your data is okay, please save your work using SAVE AS instead of SAVE.
9. To print the data, the Input, Output and Idents sheets print best with a Portrait setting.

In printing the output data, it is best to have one page of data per sheet of paper.

The graphs in Precept, Green, Blue, Red, and BluRed print best in Landscape.