**INSTRUCTIONS TO USE CONSTANT OPTIMIZATION WEB SCRAPING SOFTWARE (by Enrico Lupardi):**

**1) REQUIREMENTS:**

- Stable Internet connection

- Windows 10

- Google Chrome

**2) Folder “Constant Optimization”:**

- Inside the folder there are 3 subfolders with one .exe file each named 'barret\_pubb.exe', 'evo\_pubb.exe', 'kane\_pubb.exe', and one a .xlsx file named 'database'. (Do not care about the “internal” folder)

**3) BASIC INFORMATION:**

- Only one of the .exe files should be run at the time

- The software performs the calculation for one eye every thirty seconds to avoid websites overwhelming

- After clicking on the .exe file, two windows will open:

1) A Chrome window with the website of the formula

2) A Command Prompt window

- You can follow the progression on the Command Prompt window where some information about each calculation is displayed

- Either the Command Prompt window and the Chrome window can be minimized without interrupting the software’s execution

- 'Argos' and 'Keratoconus' columns are specific for Evo and Kane formulas respectively and will not be used for the other formulas. Fill the columns with 'yes' or 'no'

- "Lens Thickness", "CCT" (Central Corneal Thickness), and 'WTW' (White To White) are optional parameters, if you don't intend to use them leave the columns empty

- To shorten optimization time it is suggested to write in the A-CONSTANT column the ULIB or IOL.CON constant for the referred IOL. This number MUST be the same for each eye in the database.

- At the end of the calculation, a new .xlsx file will appear inside the folder. The file will have two sheets:

1) the 'DATA' sheet: a copy of the original file with the optimized A-Constant in the respective column and the 'Predicted Refraction', the 'Prediction Error', and the 'Absolute Error' columns

2) the 'SUMMARY' sheet: contains a summary of the calculation with some basic statistics.

**6) Pay attention to:**

- DO NOT CHANGE the files or folder name or extension

- DO NOT CHANGE the database column names

- ALWAYS UPDATE YOUR CHROME DRIVER FILE ACCORDING TO YOUR CHROME VERSION BEFORE STARTING

- When an error is displayed on the Command Prompt window first check all previous points and the excel file, most of the problems are due to miswritten values

- Ignore error messages in the Command Prompt window when they are not followed by software’s interruption