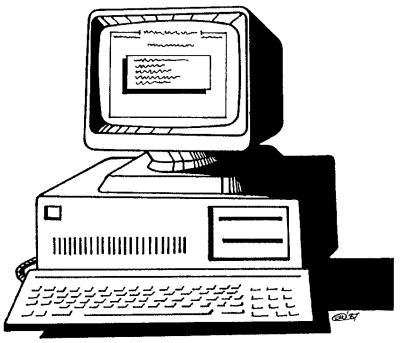
Upward Waste Light Ratio

for Road Lighting Luminaires

PERFECT LITE



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1. INTRODUCTION

The program described in the following document calculates the Upward Waste Light Ratio (UWLR) for any Ităble data stored on disk files in the CIE/SAASTAN street light format. This UWLR is referred to in the 1997 edition of the Public Lighting Code AS/NZS1158. The UWLR put simply is the percentage of flux emitted by the luminaire above the horizontal compared with the total out of the luminaire taking into account the upcast tilt angle.

The software (being a DOS application) can quite satisfactorily run under Windows 95/98/NT/2000/XP in a 'window' or 'full screen'.

Before reading any further, briefly look through this manual and you will notice that screen snapshots have been used quite regularly. This has been done to make it easier for you to equate the manual with the operation of the software. The example used in the snapshots utilises the sample photometric data supplied in the file named **MINOR.CIE**.

2. INSTALLING THE SOFTWARE

The software is provided in either of two forms depending on how it was purchased (ie. either as a stand alone version or as part of the main Perfect Lite software package).

2.1 Stand alone version

The stand alone version is supplied when you purchase the Upward Waste Light Ratio software by itself in which case the diskette provided will contain some or all of the following files:-

PLEUWLR.EXE ..... User interface to UWLR program
PLEUWLR.PDF..... User manual
PLE.HLP ..... Perfect Lite standard Help file
PLEPRMAN.EXE..... PLE Print manager software
MINOR.CIE ..... A sample CIE/SAASTAN photometric Ităble
SERIAL.NUM ..... Program Serial number file
UWLR105.EXE ..... Upward Waste Light Ratio program (UWLR)

The software can be installed on your hard disk by copying the files from the disk into a new sub-directory on your hard disk called **C:\PLEUWLR**. When you want to run the PLEUWLR software you will have to make this sub-directory the default one first, see Section ??? for further details. If running through Windows then it is suggested you create a 'shortcut' on your desktop to enable you to access the software quickly each time.

2.2 Component of the Perfect Lite package

Where the Upward Waste Light Ratio software is supplied as part of the main Perfect Lite software package then it will be automatically installed in the same sub-directory as all the other Perfect Lite programs (namely **C:\PLE**).

To run the Upward Waste Light Ratio software select the 'Upward Waste Light Ratio' option from the Main Perfect Lite menu as shown in Figure 2.1.

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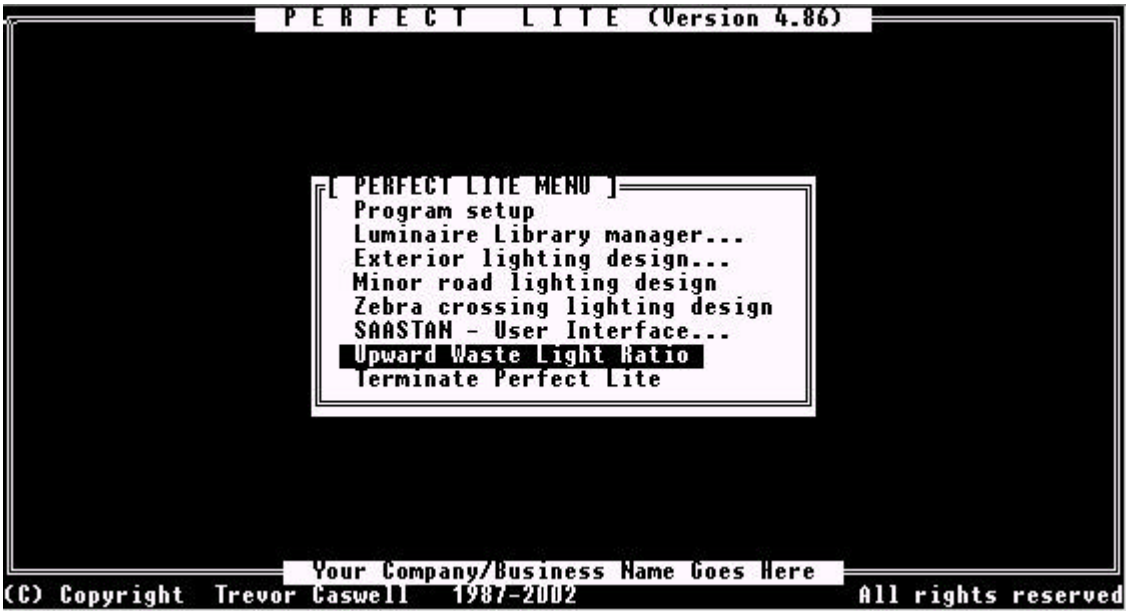

Figure 2.1

3. NAVIGATING THROUGH THE SOFTWARE

3.1 On line Help

You can get help at many points during the running of the software by pressing the <F1> key. As to what help will be given, will depend on where you are in the software. For example, pressing <F1> with the cursor located in a particular input field will give help on that particular field, see Figure 3.1. Pressing <F1> a second time will give more general help. Pressing <Esc> one or more times will remove the displayed help screens and return to the software.

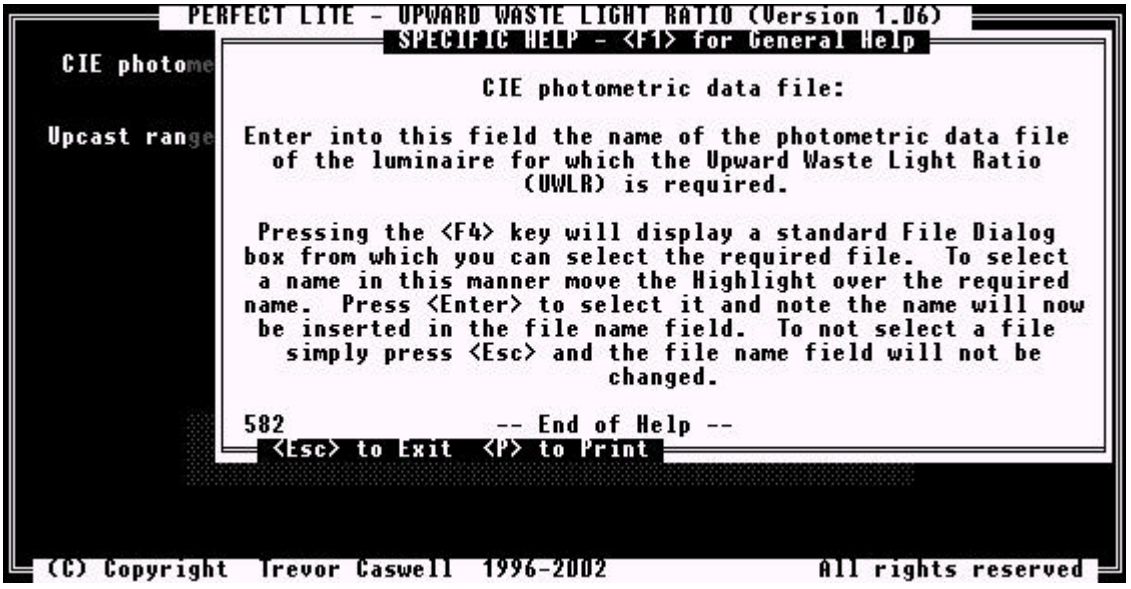

Figure 3.1

3.2 Data Input Screen Operation

Refer to Section 6 for details on the keys available on the screen to input and edit data during the running of the software.

4. RUNNING THE SOFTWARE

4.1 How to start the software

To start the stand alone version of the Upward Waste Light Ratio software, after it has been installed on your computer, type the following in response to your MS-DOS prompt (remember first to change to the correct sub-directory eg. C:\PLEUWLR)

PLEUWLR

followed by pressing the <Enter> key. As mentioned previously it may be advantageous to create a shortcut on your Windows desktop to gain quicker access to the program.

Alternatively, when supplied with the Perfect Lite software just select the ' Upward Waste Light Ratio' option from the main Perfect Lite menu, see Figure 2.1.

In both cases, the screen will then clear and display a colourful flashing logo. To clear this logo and continue running the software press any key on the keyboard.

4.2 Selecting a Printer

After the program logo has been cleared a menu will appear, similar to Figure 4.1, showing all the printers (& output devices) that you have available on your system. Make a selection of the Windows printer where you want any hard copy output to go.

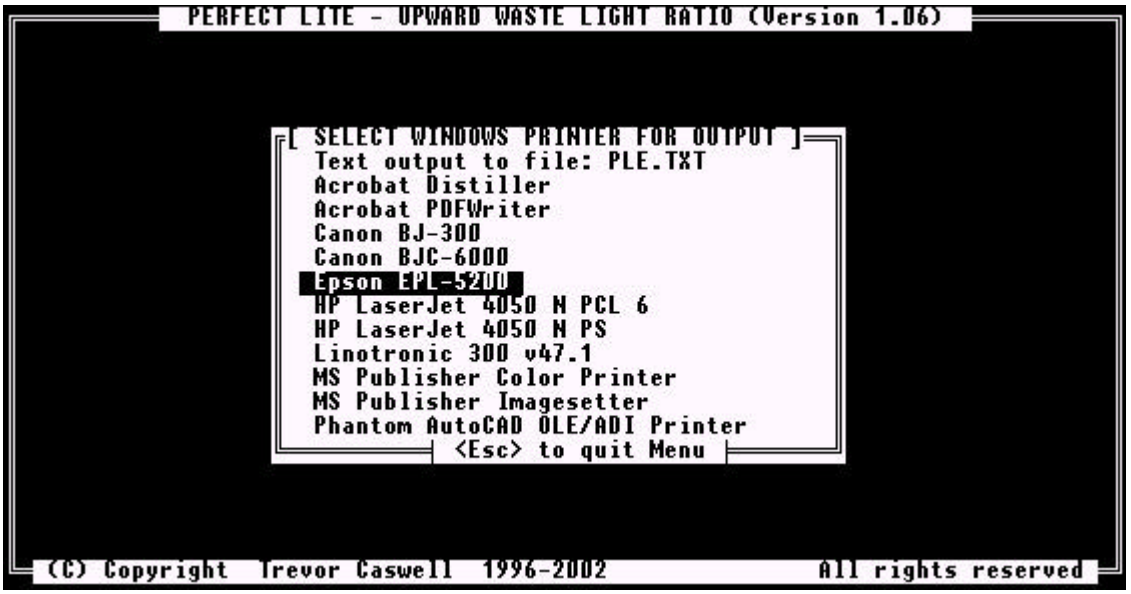

Figure 4.1

4.3 Selecting a photometric data file to evaluate

Next the screen will change to that shown in Figure 4.2. Towards the top of the screen is a field (the white area) into which the name of the file containing the photometric Ŧtable data to be analysed is input. Note that a drive letter, sub-directory, file name and extension can all be specified.

Also remember, as this program is an ‘old’ DOS application is does not recognise ‘long’ filenames as you would commonly use in Windows nowadays. This means that filenames are restricted to 8 characters in front of the ‘.’ and 3 after (eg. minor.cie or c:\longfo~1\longfi~1.dat). This will probably not be much of a problem as normal photometric data filenames are in this format, it may just be the folder (or sub-directory) name that could be ‘long’.

4.3.1 Upcast Range - Start

In the next field down the screen shown in Figure 4.2 input the starting angle.

4.3.2 Upcast Range - Finish

In the next field across the screen shown in Figure 4.2 input the last angle for which you want the UWLR calculated. If you only want one angle then simply input the same value as in the previous field.

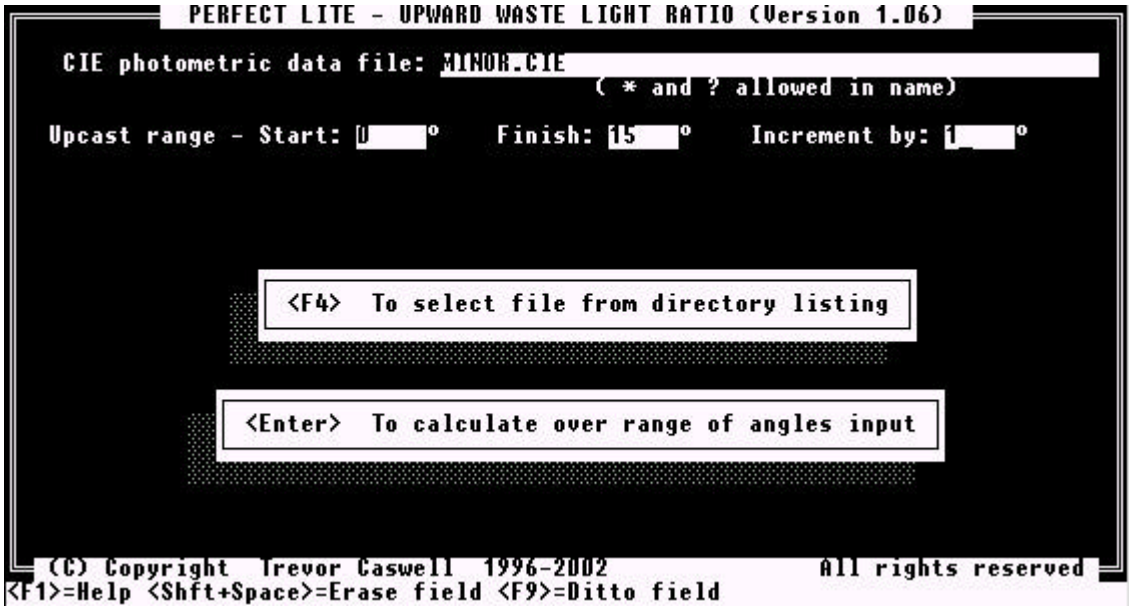

Figure 4.2

4.3.3 Increment by

In the next field across the screen shown in Figure 4.2 input the incremental angle value for the calculations. If you are only doing one angle then it does not matter what value is in this field.

4.4 Calculating UWLR

After inputting the above data press the <Enter> key and the screen will clear and commence calculating the UWLR for specified range of angles. The results will be displayed on the screen when finished, refer to Figure 4.3.

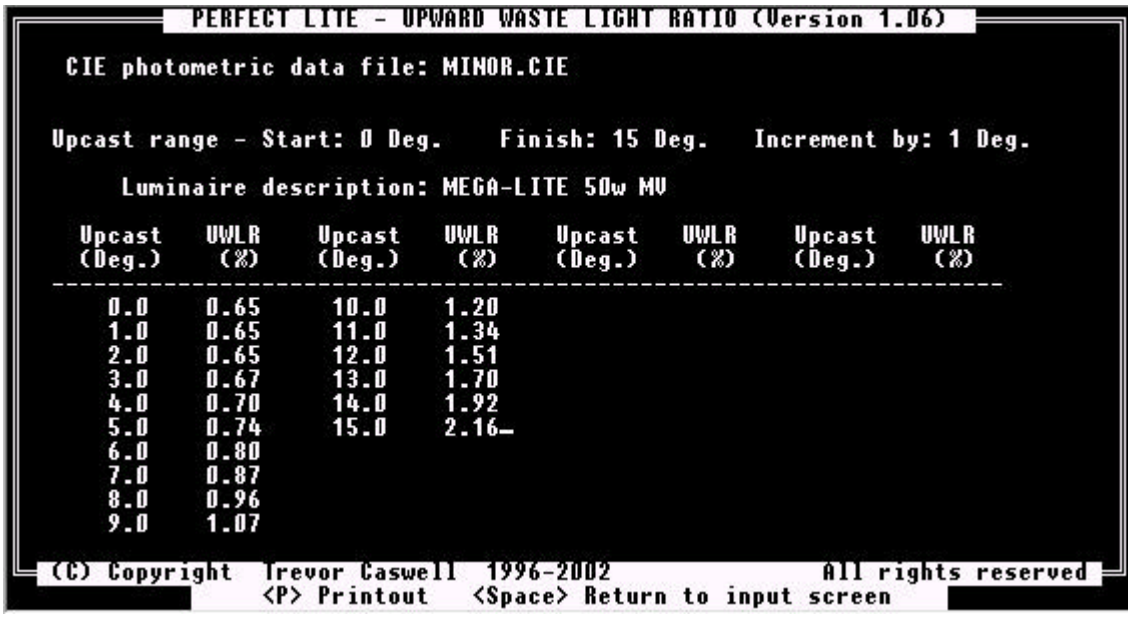

Figure 4.3

The type of computer in use will determine the length of time taken to complete the calculations, eg. on a Pentium III (500MHz) it's about 2 seconds.

4.5 Transferring results to the printer

At this point a hard copy of the results can be obtained by simply pressing the <P> key. A sample of the output generated is shown in Figure 4.4.

```
=======  PERFECT LITE - UPWARD WASTE LIGHT RATIO (Version 1.06)  =======

   CIE photometric data file: MINOR.CIE


  Upcast range - Start: 1 Deg.    Finish: 15 Deg.   Increment by: 1 Deg.

       Luminaire description: MEGA-LITE 50w MV

    Upcast   UWLR    Upcast   UWLR    Upcast   UWLR    Upcast   UWLR
    (Deg.)    (%)    (Deg.)    (%)    (Deg.)    (%)    (Deg.)    (%)
  ------------------------------------------------------------------------
       1.0    0.65     11.0    1.34
       2.0    0.65     12.0    1.51
       3.0    0.67     13.0    1.70
       4.0    0.70     14.0    1.92
       5.0    0.74     15.0    2.16
       6.0    0.80
       7.0    0.87
       8.0    0.96
       9.0    1.07
      10.0    1.20


Date: dd/mm/yyyy                                          Time: 13:26:55
```

Figure 4.4

4.6 Terminating the Software

On the screen where you nominate the luminaire file name press the <Esc> key to end the software and return to the DOS operating system (or the main Perfect Lite menu).

5. ERROR MESSAGES

At times during the use of the software incorrect data may be accidentally entered, when this occurs the computer's speaker will sound a low tone beep and display an error message on the screen. Read and note this message then press the <Space Bar> to remove the message. If the error is related to a particular input field then the cursor will be positioned in that feld for the data to be corrected.

REMEMBER *When typing data into the input fields on the screen DO NOT press the <Enter> key after each field is filled or changed. Only press the <Enter> key when you have finished filling or changing ALL the necessary fields.*

6. DATA INPUT SCREEN OPERATION

The input of data into the software (ie. response to questions etc.) is done via what I call 'fixed screen' or 'fielded' input. The software will display on the screen one or more question fields each followed by an answer field (usually black in colour but shown white on the sample screens in this manual) that indicates the maximum width of data that can be input. Figure 4.2 is an example of one of these screens with several input fields. Inputting data and moving about the fields is done by pressing the

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keys as described below. Some fields may already contain data (the default value or value input last time the screen was used) which can be left as is or changed to suit your requirements.

KEY PRESSED	ACTION
Any Alphanumeric	In *'Insert'* Mode, shifts the contents of field from cursor position to the end of the field one position to the right and drops off the last character. The key pressed is inserted at the cursor position. In *'Over type'* Mode, replaces the character at the cursor position with the key just pressed. NOTE: Numeric fields will only accept keys 0-9, '+', '-', '.' and ',' any other key will have no effect other than to sound the warning buzzer.
Tab Forward	Shifts cursor to start of the next logical field.
Tab Back	Shifts cursor to start of the preceding logical field.
<,> (comma)	Same as <Shift>+<Space> but only valid for numeric fields after at least one number has been input.
<Backspace>	Erases the character before the cursor and shifts remainder of the field one character to the left.
<Enter>	Transmits contents of screen back to software for processing.
<Return>	Same as <Enter> key.
<Esc>	Aborts input to the current screen and returns to a previous menu/screen to make a selection again.
<Home>	Shifts cursor to beginning of current field.
<End>	Shifts cursor to just past last character in current field.
<Ctrl>+<Home>	Shifts cursor to start of the first logical field on the screen.
<Ctrl>+<End>	Shifts cursor to start of the last logical field on the screen.
<↑>	Shifts the cursor up and to the left to the next logical field.
<↓>	Shifts cursor down and to the right to the next logical field.
<←>	Shifts cursor one position to left or to end of preceding logical field if already at the start of the field.
<→>	Shifts cursor one position to right or to start of next logical field if already at the end of the field.
<Insert>	Toggles between *'Insert'* and *'Over type'* modes, this is indicated by a change in the size of the cursor.
<Delete>	Deletes the character at the cursor position and shifts the remainder of the field one position to the left adding a space on the end.
<Space Bar>	In *'Insert'* Mode, inserts a blank at the cursor position and shifts everything to the right one character. In *'Over type'* Mode, places a blank character at the cursor position and moves the cursor one position to the right.
<F1>	Displays a help screen for the field where the cursor is located.
<->	In numeric fields - pressing this key will change the sign of the value in the field. This key can be pressed at anytime during the entering or changing of values in the field.

When data is shown or has been input into ALL appropriate fields the <Enter> key is pressed which passes the values back to the software for processing. Should a field contain invalid or incorrect data then an error message will be displayed. To clear this error message press the <Space Bar> (as indicated by the flashing <Space> symbol on the bottom line of the screen) and the cursor will be positioned at the start of the field in error. Change the data in this field as necessary and press the <Enter> key again to continue.

Inputs in the fields can be either a string of one or more characters or numbers (the decimal point only being necessary when the number has a decimal fraction).

7. UPDATE HISTORY

The following is a brief list of all the major changes that have taken place in the Spacing Graph Generator program.

VERSION - 1.06 (Released October 2002)

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- Released with the Perfect Lite package - Version 4.86
- Modified to improve performance on Windows NT/2000/XP systems
- Allows results to be output to the text file 'PLE.TXT' – will be appended to the file if it already exists.

VERSION - 1.05 (Released May 2001)

- Released with Perfect Lite - Version 4.84
- Modified to do all printing through the Windows Print Manager
- Menu added at start of program to select printer for output
- Detection of errors during running of software improved

VERSION - 1.03 (Released June 1998)

- Released with Perfect Lite - Version 4.82
- Full Year 2000 compliance
- Complete path name allowed for input file name
- Selection of file (<F4>) uses standard DOS file dialog box

VERSION - 1.02 (Released April 1997)

- Released with Perfect Lite - Version 4.81
- Original issue of software

VERSION - 1.0 (August 1996)

- Original Beta version for testing purposes with selected users

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