

P Category
Lighting Software
for
AS/NZS 1158.3.1:2005



COPYRIGHT NOTICE

© Trevor Caswell 2005-2008 All rights reserved

Copyright exists on the contents of this manual and the software '**PlePcat.exe**' supplied on the accompanying electronic media. You agree by purchasing the software to use it on only one machine. However, it may be transferred and used on another machine, but shall under no circumstances be used on more than one machine at a time. One copy can be made of the software into any machine readable form for backup purposes only in support of your use of the software on a single machine.

DISCLAIMER OF WARRANTY

The software and manual are sold *AS IS* and without warranty as to performance. Because of the use to which this software may be put, and the variety of luminaires and hardware used in conjunction with it, no warranty of fitness for a particular purpose is offered. Whilst the developer has invested considerable time and effort to create a high quality product, the user must assume the risk of using this software.

Trevor Caswell Software
P.O. Box 236
SALISBURY, Qld 4107
Australia
Ph. & Fax.: (07) 3275 2406
Int: +61 7 3275 2406
Mobile: 0417 732 763
Email: support@perfectlite.com
Web: www.perfectlite.com

TABLE OF CONTENTS

Section No.		Page
1.	INTRODUCTION.....	2
2.	INSTALLING THE SOFTWARE.....	2
3.	STARTING THE SOFTWARE.....	3
4.	BRIEF TOUR OF THE SOFTWARE.....	4
5.	UPDATE HISTORY	11

1. INTRODUCTION

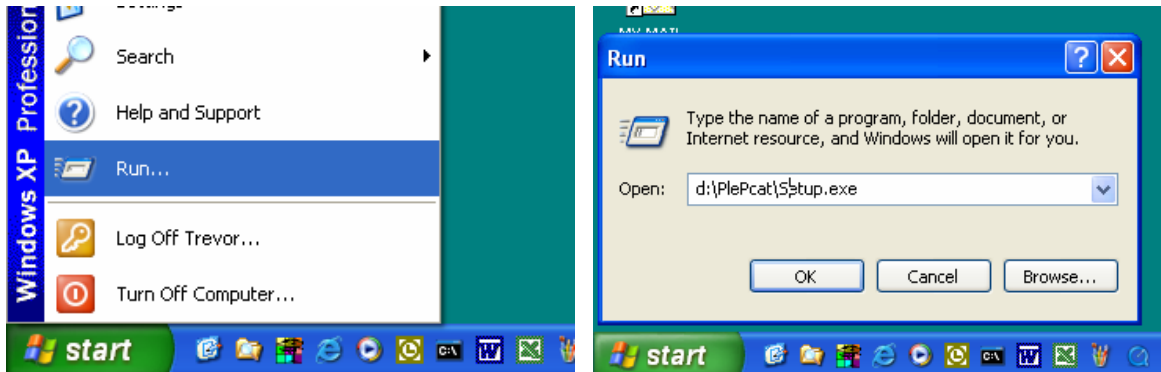
The **P Category Lighting** software (PlePcat) produces Spacing Tables which can be used as design aids in the lighting of Category 'P' roads in Australia and New Zealand. Category 'P' was originally introduced in the revised Road Lighting Standard AS/NZS 1158.3.1:1999, released in November 1999. This Standard has now been superceded by AS/NZS 1158.3.1:2005 which contains more detail as well as some minor changes and enhancements.

It is assumed that the user has basic knowledge of the operations of the PC and the Windows 98/NT/2000/XP/Vista operating system.

2. INSTALLING THE SOFTWARE

Depending on how the software was purchased it will be provided in either of two forms (i.e. either as a stand alone version or as part of the main Perfect Lite software package). In either case, the P Category Lighting software will be contained on a CD-ROM and will require the following procedure to install the software correctly.

First, load the CDROM into your CD Drive and then click on the **Start** button, Select **Run...** from the menu and type **d:\PlePcat\setup.exe** (d: is the drive letter of your CDROM) into the Run dialog box and then click **OK**.



Follow the subsequent instructions on the screen to correctly install the P Category Lighting software on your computer. Generally, it will only be necessary to click on the **Next** button several times to carry out the installation. It is recommended you choose the default folder (**c:\Program Files\Perfect Lite**) in which to install the software.

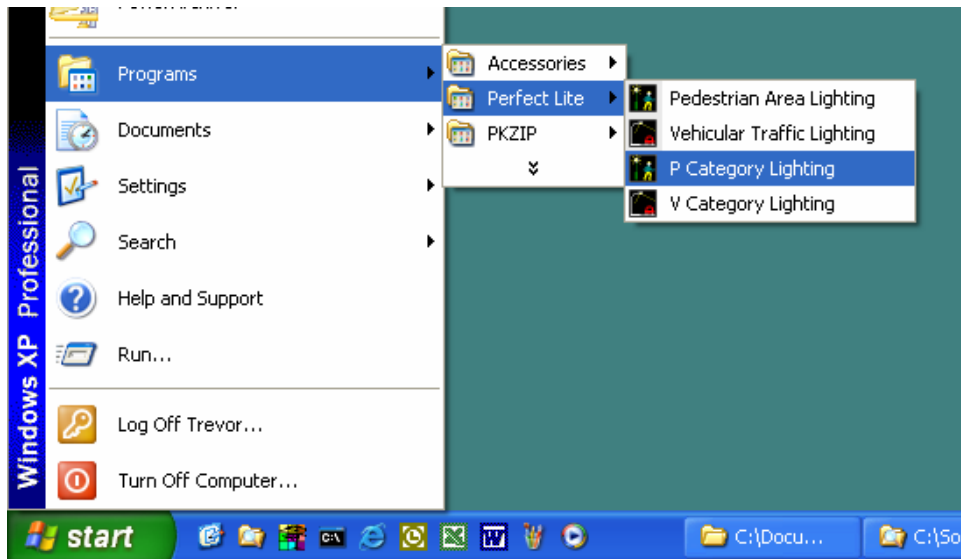
If you install the software in another drive and/or folder then please make a note of the location below for future reference.

P Category Lighting software installed in drive/folder:

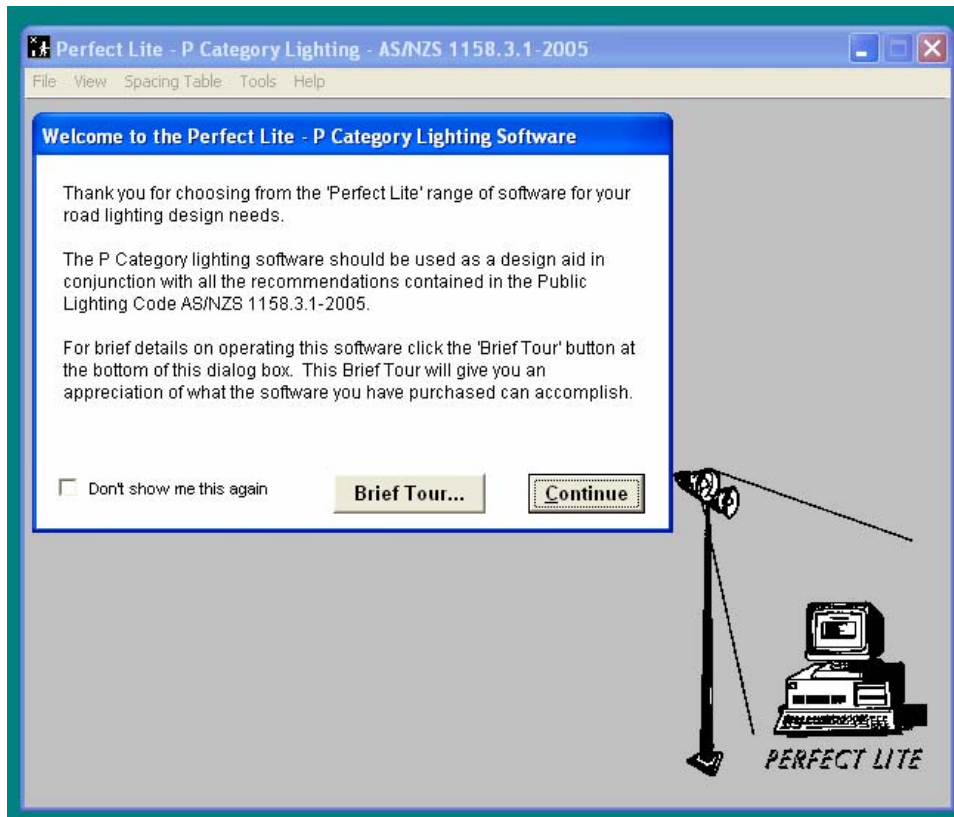
.....

3. STARTING THE SOFTWARE

Click on the **Start** button, select **Programs** then **Perfect Lite** then **P Category Lighting** from the menu. (Note: The menu may also show **Pedestrian Area Lighting**, which is still available for use, but the LTPs and calculation methods relate to AS/NZS 1158.3.1:1999 – *the superseded Standard*.)



The window as shown below should then be displayed.

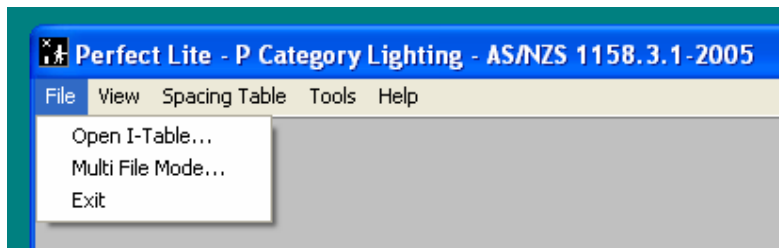


If this is the first time you have run the software then the 'Welcome to the Perfect Lite.....' window will appear. If you don't want it to appear again click in the box adjacent to the text "Don't show me this again".

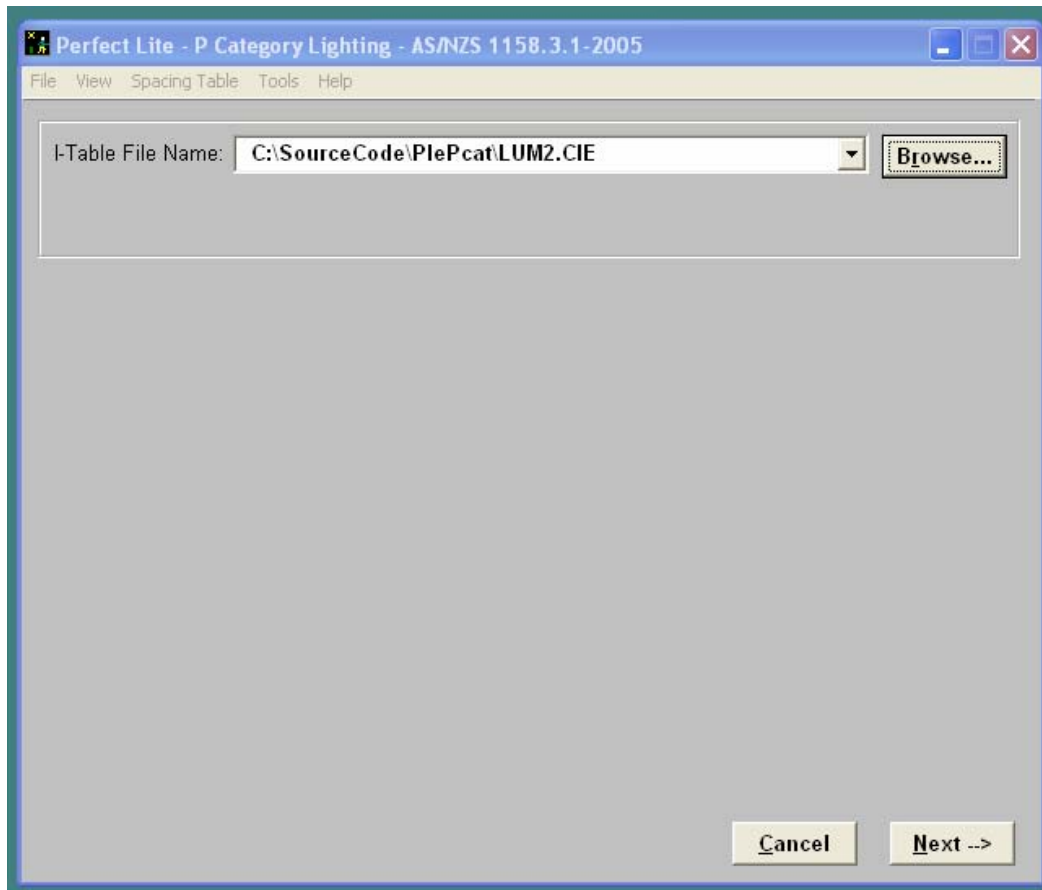
4. BRIEF TOUR OF THE SOFTWARE

The **P Category Lighting software** (referred to as “PlePcat”) mainly produces spacing tables which can be used as design aids in the provision of lighting for Category ‘P’ roads, paths and cycleways. Category ‘P’ was originally introduced in 1999 when the (1986) road lighting Code, AS1158, was revised. The Code has been further revised and is now known as **AS/NZS 1158.3.1:2005**. The PlePcat software has been amended to meet the changes in the Standard.

Before you produce a spacing table (or generally do anything else in the software) it is necessary to load (or open) a photometric I-table for the luminaire under consideration. These I-tables would usually be stored on your computer’s hard drive or floppy disk as a file supplied from the manufacturer or supplier of the luminaire. To get you up and running the PlePcat software is supplied with a sample file (LUM2.cie) which corresponds to the one used in the Appendix of **AS/NZS 1158.3.1:2005**. From the **File** menu click on **Open I-Table**.



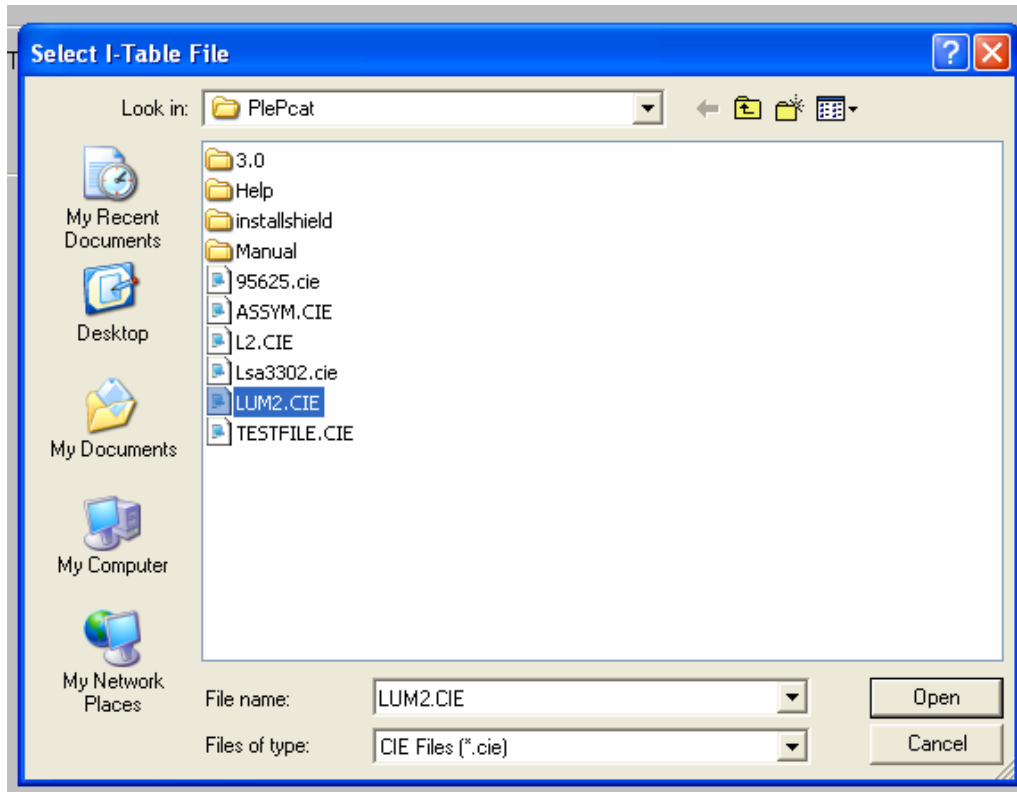
This will then display the screen where the file name is required to be input.



Each time you enter this screen (and most others in the program) the fields will be filled with the data last input. Should you wish to select a different file then either:-

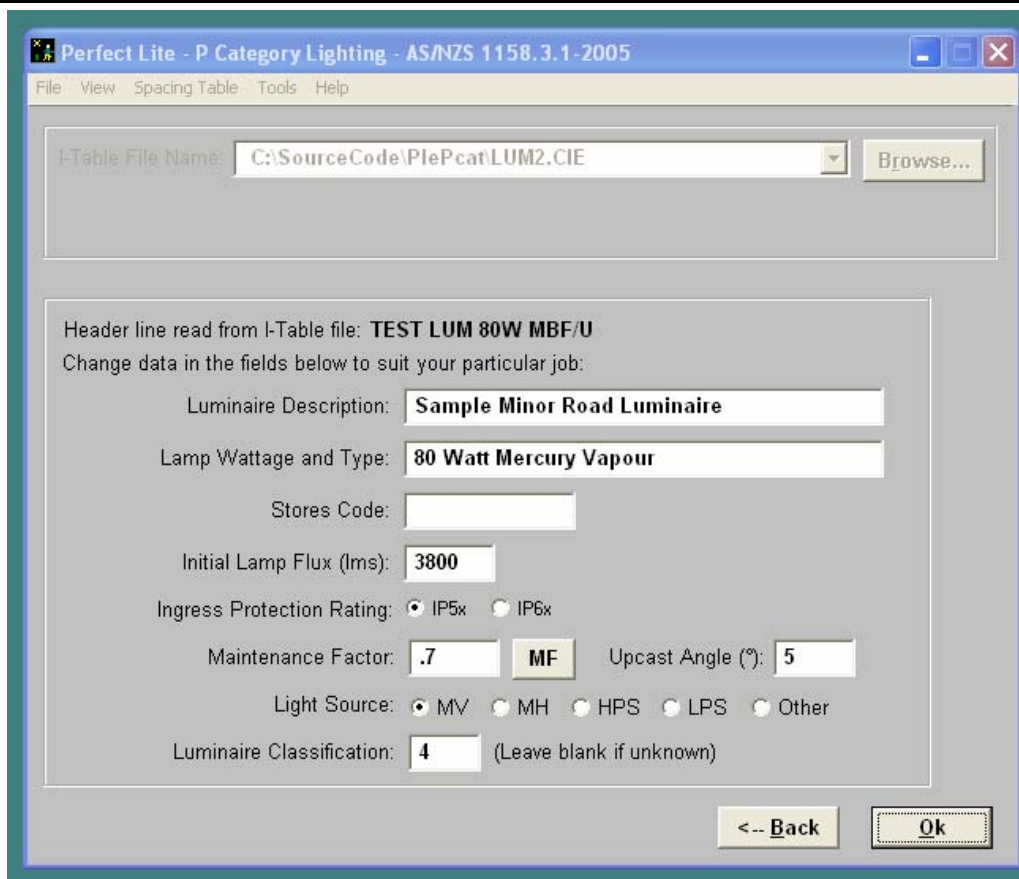
- 1) enter the name directly in the **I-Table File Name** field

- 2) click the down arrow to the right of the combo box to select from previous files used or
- 3) click on the **Browse** button to invoke the standard Windows File Open Dialog Box. to select the appropriate file, example below



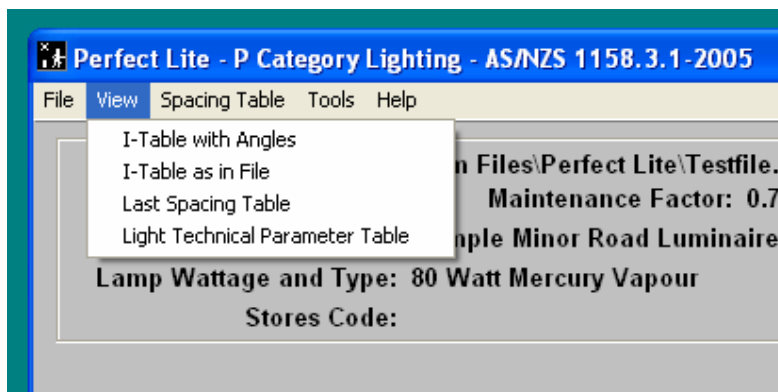
*It should be noted that by default, the dialog box will initially only display all the files with a "cie" file extension (typical for road lights). If this is not the type of file you are looking for make a choice from the **Files of type** drop down list box. When the desired file is in the **File name** field click the **Open** button on the file dialog box to continue on with the software.*

When the desired file name has been entered click on the **Next** button to continue on with the software. On the following screen input descriptions of the luminaire, initial flux value, maintenance factor, light source etc..

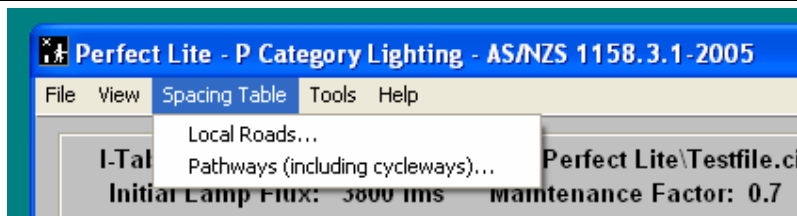


Inputs in the description fields are only necessary for identification of the luminaire and lamp and will be included on any output produced by the software. Once again when all the information has been entered click on the **Ok** button.

You have now loaded the I-table file into the program and at this point you can view the photometric I-Table by selecting either of the top two items from the **View** menu.



However, the main thing that we want to do is produce a spacing table (or check on compliance for a particular spacing). From the **Spacing Table** menu select **Local Roads...**. Alternatively, you could select **Pathways (including Cycleways)** from the same menu depending on your needs.

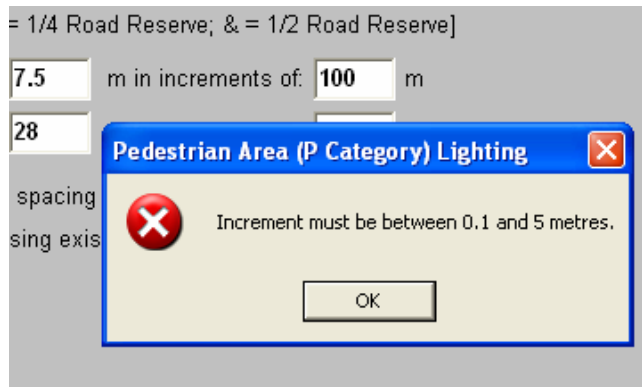


The screen will change to show several input fields to be filled with appropriate data relative to the table you wish to produce. As this is the first time the software has been run it will have the default values as used in Appendix B of AS/NZS 1158.2:2005.

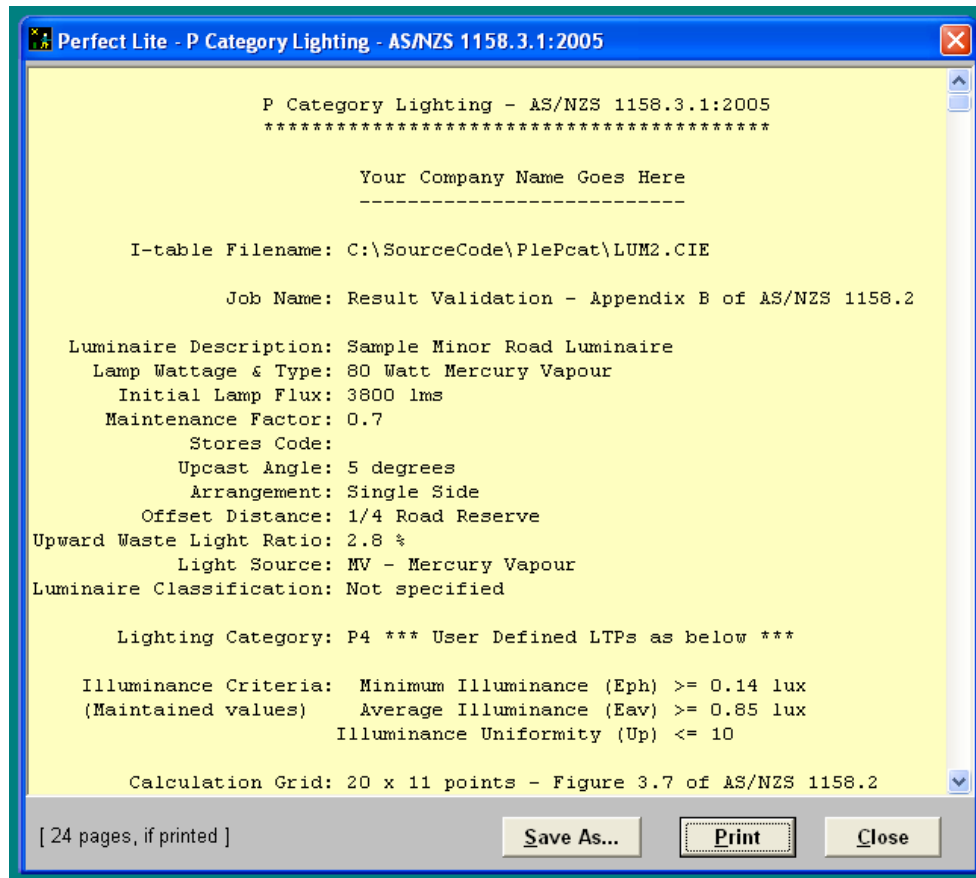
For this Brief Tour we'll just leave the fields as they are. Please note in the example above that the **User Defined LTPs** check box is checked. Normally, this check box is left un-checked for strict compliance with AS/NZS 1158.

Now might be a good time to talk about the **On-line Help** accessible from within the software. If you are in doubt as to what details should be input into any field then simply put the cursor in that field (ie. Left mouse click in the field) and press the **F1** key. A pop-up Help screen will appear giving you information on the contents of the field and limit of values that can be input etc. This help feature is available for any item on a Menu, any button or screen displayed. To remove the Help screen click on the **X** in top right-hand corner of the Help window. You can check out this help feature for some of the fields on the current screen.

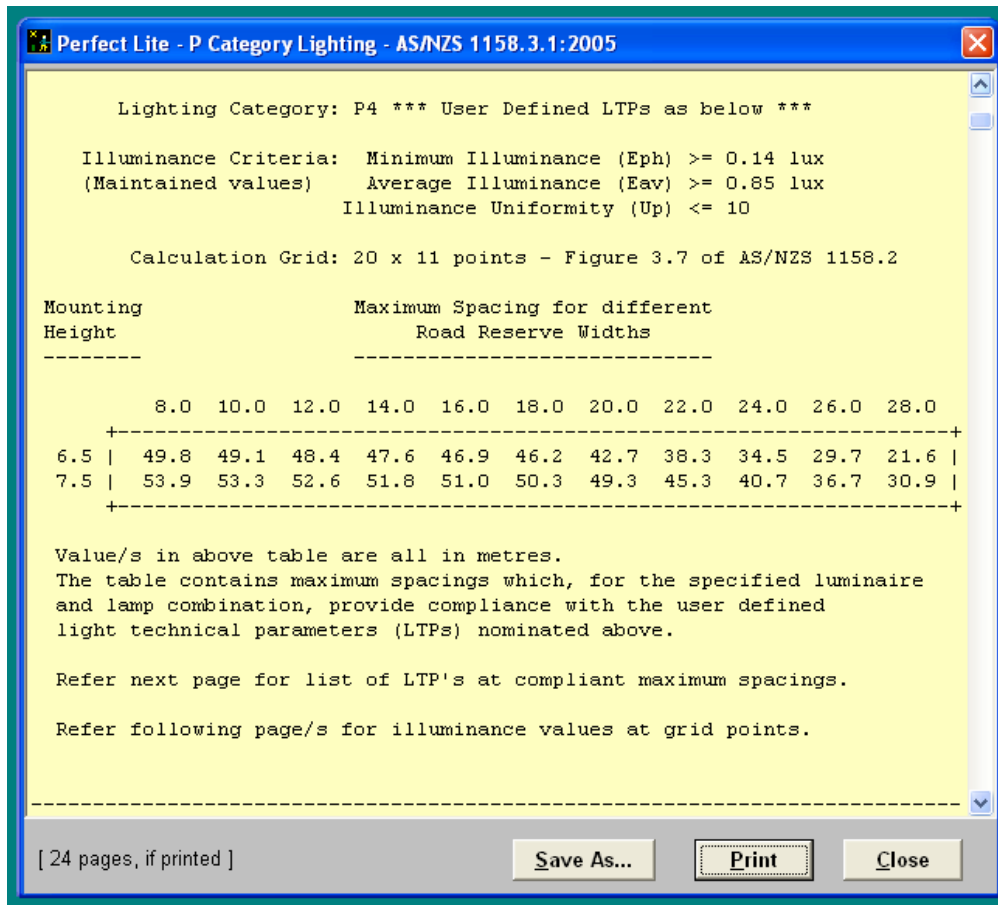
Anyhow, back to the process of producing the spacing table. Now press the **Calculate** button to get the software to carry out the necessary calculations to determine the maximum spacing for the range of road widths and heights etc. entered. When **Calculate** is pressed the software first validates the data in the input fields. If an error occurs, such as a value being out of an allowable range then an error message will appear such as below.



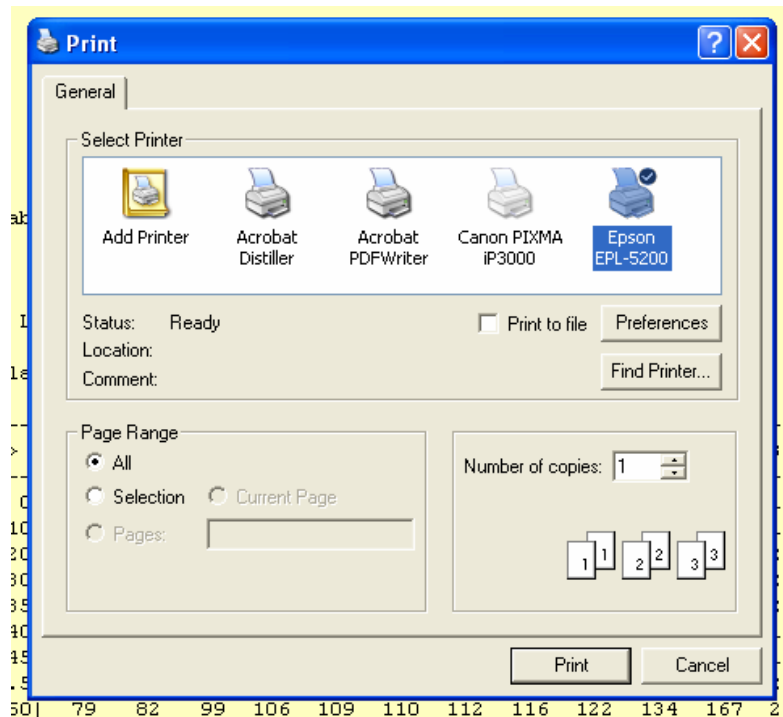
An example of the top part of a spacing table is shown below.



Use the scroll bar on the right side of the screen to move the display up to view the remainder of the table.



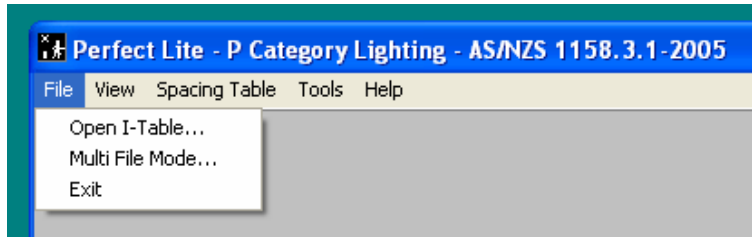
To print out the complete table on your printer click on the **Print** button and the standard Windows print dialog box will be displayed. Alternatively, you can save the results to a text file by clicking on the **Save As** button.



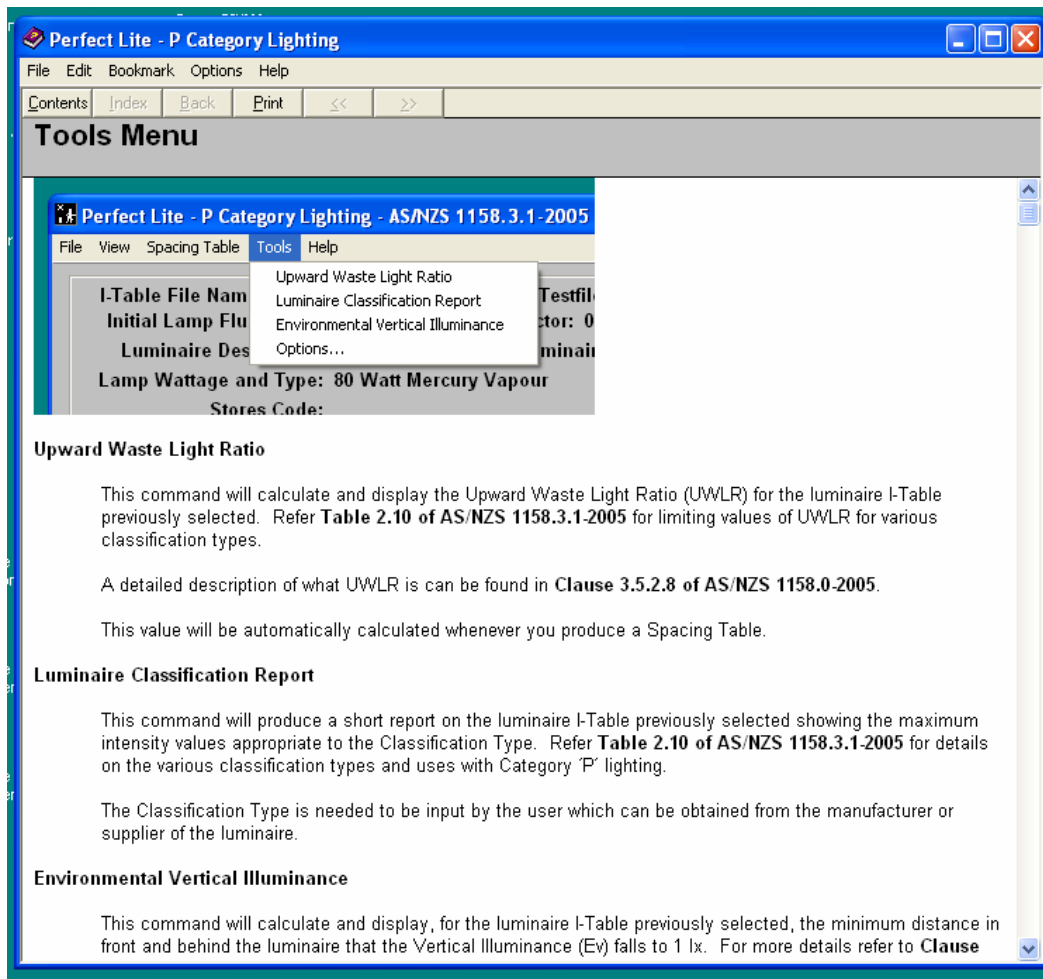
Select an appropriate printer and click on the **Ok** button to send the printout. Once the printout has

been produced click on the **Close** button to remove the calculated results and return to the screen where you can change some values and produce another table. If you don't want to produce another table then just click on the **Cancel** button. This will take you back to the point where you can make a selection from the menu along the top of the PlePcat window.

To close down the program altogether select from the **File** menu the **Exit** option or click on the **X** in the top right-hand corner of the PlePcat window.



The other choices from the menu along the top of the window are self explanatory so I won't go into detail here. If you have doubts then place the cursor over the required menu item and while holding down the left mouse button press the **F1** key and a pop-up Help screen will be displayed. An example of the one for the **Tools Menu** is below.



Should you have any problems using this software or would like to offer suggestions on future enhancements contact me on Ph.: 07 3275 2406 or Email: trevor@perfectlite.com.

Trevor Caswell
October 2008

5. UPDATE HISTORY

Following is a brief list of all the major changes that have taken place over the years in the Perfect Lite minor road lighting software.

P CATEGORY LIGHTING (PlePcat)

VERSION 3.04 (Released October 2008)

- Corrects problem reading an i-table file where an intensity value is greater than 999

VERSION 3.03 (Released November 2007)

- Check box for the New Zealand reduced LTPs has been replaced by Category P3R & P4R on the Category selection drop down list box
- Additional check box & input fields added to allow input of variable user defined Light Technical Parameters.
- Checks Read/Write access is available to the user to allow program to operate correctly.
- Lengthy Path/File name for the selected luminaire is suitably wrapped on result screens & printed output.

VERSION 3.02 (Released September 2006)

- Categories P5 to P8 able to be selected for Pathways.
- Displays on the Luminaire Description form the de-rating factor if HPS or LPS previously selected.
- Job Name field added to Local Area Roads and Pathways form.
- Allows mounting heights down to 0.5m for Local Roads (any Upcast angle).
- Allows mounting heights down to 0.5m for Pathways (Upcast angle must be zero) eg. used for Bollards.
- Range of allowable Offset values increased between -12m and +30m to -20m and +40m.
- Check box added to select whether to include the light contribution from adjacent luminaires to the span being investigated.

VERSION 3.01 (Released November 2005 – Special version for Sylvania Lighting Australasia only)

- Menu item 'Luminaire Classification Report' replaced by 'Luminaire Intensity Report' to display intensity values at specific angles in order to derive the Luminaire Classification Type.
- Foreground and Background colours on some screens have been changed.
- Shows the respective maximum 'Maintenance Factor' opposite the 'Ingress Protection Rating' field.
- 'Luminaire Classification' field removed from the Luminaire Description input screen.

VERSION 3.00 (Released August 2005)

- With the introduction of **AS/NZS 1158.3.1:2005** the PlePAL program has been superseded by the P Category Lighting software (**PlePcat**).
- 'Miscellaneous' menu renamed to 'Tools' menu and 'Options' item added.
- Setting the company name has moved to the 'Options' menu.
- 'Options' menu now includes a new item called 'Output setup' which is used to set the margin width, font name & size for all output to the printer.
- When 'Multi File Mode' is activated a small tick will be shown against it in the 'File' menu. To exist 'Multi File Mode' simply select the item when it is ticked.
- Maintenance factor calculation form has been changed to also include the 'IP Rating' and a 'Lamp Depreciation factor'.
- Luminaire Description form now includes fields for the Light Source and Luminaire Classification.

PEDESTRIAN AREA LIGHTING (PLEPAL)

VERSION – 2.06 (Released June 2004)

- “Multi File Mode” added which allows the automatic processing of up to 200 I-table files against a single set of layout parameters.
- Due to access problems associated with Network security the configuration files (Plepal-user.cfg) is now stored in the same folder as the program (NOT root folder of C drive).
- Warning message is given if the Printer used for output is changed from the default printer.
- Program version/Date stamp on bottom of printouts has been modified slightly.
- Contact email address on ‘About’ screen changed.

VERSION – 2.05 (Released May 2003)

- Released with Perfect Lite - Version 4.86a
- ‘Save As...’ button added to the screen where all results are viewed. This allows you to save or append the results to a text file rather than printing them out.
- Progress bar added to the Local Road and Pathways calculation screen.
- Allows Category P1 & P2 for Local road calculations (ignores Vertical illuminance).
- Now validates the Company name against the serial no. of the software.
- Contact details changed on the ‘About’ screen
- Calculation of Luminaire Classification corrected.
- Note about compliance after ‘5 November 2001’ removed as no longer applicable.

VERSION – 2.04 (Released May 2001)

- Released with Perfect Lite - Version 4.84
- When ‘tabbing’ between input fields the whole field is highlighted so if you want to change the whole field you simply start typing the new value rather than first erasing all previous text. If you want to just change part of the field then press the <End> key and the highlight will disappear and you can move the cursor back to what you want to change data.
- Initialisation file (“.ini”) now referred to as a Configuration file (“.cfg”)

VERSION – 2.03b (Released October 2000)

- For Local Roads and an Opposite arrangement the program now allows the luminaire Offset to exceed half the Road Reserve width - this will simulate a Central arrangement.

VERSION – 2.03a (Released August 2000)

- The bug has been fixed where the program could not be re-started and restored to full size if closed down (or the PC shutdown) when it is minimised.

VERSION – 2.03 (Released May 2000)

- A field description on the Path Spacing Table input screen has been changed from ‘Distance from Path Edge’ to ‘Offset from Path Edge’ to remove confusion as to what the distance represents – see associated help screen.
- ‘&’ character can be used in ‘Offset Distance’ and ‘Offset from Path Edge’ field to nominate the luminaire position as halfway across road reserve or path. Compliments the ‘*’ character for one quarter across road reserve/path already built into the software.
- A history of revisions to the software added to the Contents item on the Help menu.
- When selecting ‘Open an I-table’ from the menu, the ‘I-Table File Name’ field has been changed to a drop down list box allowing the selection of the file name from one previously used

VERSION – 2.02 (Released February 2000)

- When selecting ‘Open an I-table’ from the menu, the first input screen has been changed to only select the required file name. On the subsequent screen where you would normally input the description you now also input the flux, maintenance factor and upcast angle.
- Save the values entered for ‘Luminaire Description’, ‘Lamp Wattage and Type’ and ‘Stores Code’ against the file name so it will be automatically displayed next time the same luminaire is used.
- Check box added to allow all the LTP’s at maximum spacings to be displayed on a separate page of the Spacing Table.

- Check box added to allow all the display of illuminance values at grid points of each maximum on separate pages of the Spacing Table.
- The location of the PLEPAL program window on the display screen will now be restored to where it was located last time the program closed down.
- Luminaire Classification changed to show if it complies after 5 November 2001.
- A 'Back' button has been added to some screens & position of the 'Next' and 'Back' buttons swapped around on other screens.

VERSION – 2.00 (Released November 1999)

- Released as a result of the revision to the Australian and New Zealand Public Lighting code AS/NZS 1158.3.1:1999 where lighting category 'P' was introduced.
- The program has been converted to a true **32 bit Windows Application** and the named changed to *Perfect Lite – Pedestrian Area Lighting* (PLEPAL.EXE). The previous MS-DOS versions (1.60, 1.59 etc.) was known as the *Spacing Graph Generator for Minor Roads* (PLESPACE.EXE).

SPACING GRAPH GENERATOR (PleSpace)

VERSION - 1.63 (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
- With the introduction of AS/NZS 1158.3.1 this program has effectively been superseded by the Pedestrian Area Lighting software (PLEPAL) – refer separate manual detailing this software.

VERSION - 1.60 (Released June 1998)

- Released with Perfect Lite Version 4.82
- Allows the specification of a full Path for an I-Table file
- Standard DOS file dialogue used for file selection
- For Mode 3 – A maintenance factor of up to 10 can be used for R-Table '0' to calculate Lux rather than Cd/m²

VERSION - 1.59 (Released April 1997)

- Released with Perfect Lite Version 4.81
- Road Width changed to go from 2m through to 40m
- Now uses version 1.60 of PPD.EXE for printer output

VERSION - 1.58

- Special issue for SEQEB/Energex in Queensland
- Rounding off of displayed results corrected
- 'Count' column removed
- 'Plot' & 'Redraw' option removed from graphics screen
- Error message given if 'PPD.EXE' file not found prior to printing
- Printer port displayed after printer description on opening screen
- Spacing range increased to 120m on graph/plot
- Road reserve width increased to 38m on graph/plot
- Default Upcast angle set to 5 degrees
- Reading default set up values from file 'PLESPACE.TBL' added
- Reading from file PLESPACE.LIN now fully supported
- Maximum spacing displayed to 1 decimal place
- 'Emax/Eav' displayed to 1 decimal place
- 'NO COMPLIANCE' added if Maximum spacing less than 0.005m
- <F5> key added to select from Parameter table file
- If PLE.HLP not found then PLESPACE.HLP used

VERSION - 1.57 (Released July 1995)

- Message window displayed if 0 cd/m² found at V=0 in I-table - "/ADJ" command line option added to adjust values to 1 cd/m²
- "DESCRIPTION=" line added to 'PLESPACE.INI' file

- Disables MOUSE if file 'MOUSE.NO' found

VERSION - 1.56

- Text 'AS1158.1 -1986' added
- Display/Print out fixed so when NOT complying spacing 'Eav','Emin','Emax/Eav' shows last actual calculated values NOT last "complying" values
- Version no. added to text results screen/print out

VERSION - 1.55

- Now uses version 1.42 of PPD.EXE
- <Esc> used to abort processing of PrintGL print out
- Colour argument of 'PSET' & 'LINE' made Long Integer
- Configuration file now "PLE48.INI"

VERSION - 1.54

- Draws vertical ordinate at nominated values as in file "PLESPACE.LIN"
- Rounding off corrected to be same as print out

VERSION - 1.53

- 'Opposite' arrangement re-instated as maximum now determined using both lights

VERSION - 1.52

- '/FULL' command line option added for detailed calculation output to file
- Now support large asymmetrical I-table files
- Problem fixed in calculating Eh behind light
- 'Opposite' arrangement removed till Finding maximum is done properly
- Undocumented '/GRID' command line option added

VERSION - 1.51

- Uses PLE.HLP as the Help file
- Will use Hercules Graphics card
- Stand alone version displays colours in Help correctly

VERSION - 1.5

- Use PPD.EXE instead of PRINTGL
- Can be called from PLE.EXE (PLESPACE.INI automatically set up)
- Released with version 4.77 of Perfect Lite
- PPD.EXE outputs to DOS LPT? not BIOS LPT? (fixes bug with network printers)
- Uses PLE47.INI for configuration options

VERSION - 1.4

- NON Intel co-processor problem fixed

VERSION - 1.3

- Program corrected for when no solution found for a particular road width
- Thickness added to printer output

VERSION - 1.2

- PRINTGL used for graphics printer output

VERSION - 1.1

- Minor changes only

VERSION - 1.0 (Released 1990)

- Original issue