SAASTAN
User Interface Shell
for
Major Roads

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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. While the developer has invested considerable time and effort to create a high quality product, the user must assume the risk of using this software.

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1.   INTRODUCTION

The following manual describes the workings of the **SAASTAN - USER INTERFACE** program (**UIS97.EXE**) referred to in the rest of the manual as 'UIS97'. This DOS application is written for the IBM PC running the Windows 95/98/NT/2000/XP operating system with 1 Floppy diskette drive or Hard disk, Colour monitor and printer.

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 main purpose of the UIS97 program is to provide a friendly interactive interface between you, the user, and the **SAASTAN.EXE** program (SAASTAN for short) supplied with the **SAA Public Lighting Code AS1158.2 - 1986**. The UIS97 program performs a similar function to the **CARL'** program originally provided by Standards Australia.

The UIS97 program also maintains a library of street lighting luminaires on disk. Each luminaire in the Library is accessed by a 4 digit luminaire reference or code number. For ease of use the program has been designed around a menu system to perform required tasks. Once an option from a menu is selected UIS97 proceeds with the data input screen/s etc. to perform the lighting calculations. Input for Modes 1, 2 and 3 of SAASTAN (i.e. the file named **SAADAT**) is created automatically by answering several questions about the road and installation geometry and luminaire in use. This input file is then submitted to the SAASTAN program and the output created (eg. The file named **SAAOUT**) is then listed in several different ways. These listings include a summary listing showing compliance with road category V1 to V5. The outputs can be to either the screen or the printer.

A Batch mode is also available to process several runs consecutively without user intervention (eg. overnight or during lunchtime).

Context sensitive Help screens are included in the program to assist the user at all times. Errors when encountered will be displayed with a short description with detailed Help available at the press of the <F1> key.

NOTE: From late 2002 this DOS software has been replaced by a windows application that performs many of the same functions but with the more common windows interface. The software is called the Perfect Lite – Vehicular Traffic Lighting software (PLEVTL.EXE) and is described in a separate manual.

2.   GETTING STARTED

2.1   Program installation

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

2.1.1   Stand alone version

The stand alone version is supplied when you purchase the User Interface program by itself in which case the diskette provided will contain some or all of the following files:

    INSTALL.BAT.....................Installation batch file
    PLEPRMAN.EXE ....PLE Print manager software
    README.DOC....................Latest information on the software not included in this manual
    RTABLES.DAT....................File containing standard road surface reflectance tables
    SAMPLE.CIE ....Sample CIE/SAASTAN major road photometric I-table file
    SERIAL.NUM ....Program serial number file
    SLINDEX.DAT ....Luminaire library index file
    SLPHOTOM.DAT.................Luminaire library photometric file
    UIS97.EXE ....User Interface software

UIS97.HLP .... On line help file
UIS97.INI .... Initialisation file (user to edit, refer Section 12)
UIS97.PDF.......................... User manual

The software can be installed on your hard disk by carrying out the following instructions. Load the diskette provided in the appropriate floppy drive and at your DOS prompt type **A:\INSTALL** and press <Enter>. The install batch file will create a new sub-directory on your hard disk called **C:\UIS** and copy the contents of the diskette to this directory. When you want to run the UIS97 software you will have to make this sub-directory the default one first. More details are supplied starting at Section 2.2. If running through Windows then it is suggested you create a 'shortcut' on the desktop to enable you to access the software quickly each time.

2.1.2   Component of Perfect Lite package

Where the User Interface software is supplied as part of the main Perfect Lite software package then it will be automatically installed in the following sub-directory **C:\PLE\UIS**.

To run the User Interface software select the 'SAASTAN - User Interface....' option from the Main Perfect Lite menu as shown in **Figure 2.0**.

Figure 2.0

2.2   How to run the stand alone version

To start the stand alone version of the User Interface, 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:\UIS)

UIS97

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.

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.

Several optional keys can be used to force the program into certain default states as follows. These option keys are separated by at least one space from the UIS97 command used to start the program.

/U   will force the program to delimit data input fields with the underscore character (_) rather than the usual black or highlighted area.

/M will force the program to run in 'Monochrome mode' irrespective of whether a colour monitor is present or not. This can be of assistance if you have a Laptop computer with an LCD display which does not display some colours correctly.

/P will force the program into Pause mode where the computer will stop and display the screen returned from SAASTAN and await pressing of the <Space Bar> before continuing. Usually only used for troubleshooting when errors are returned from SAASTAN.

2.3   Selecting a Printer

After the program logo has been cleared a menu will appear, similar to Figure 2.1, from where you make a selection of the Windows printer that you want output to go to. See Section 2.5 on how to select from a menu.

```
╔══════════ SAASTAN - User Interface (AS/NZS 1158.1.1:1997) ══════════╗
║                                                                      ║
║                                                                      ║
║                ┌─[ SELECT WINDOWS PRINTER FOR OUTPUT ]─┐             ║
║                │  Acrobat Distiller                    │             ║
║                │  Acrobat PDFWriter                    │             ║
║                │  Canon BJC-6000                       │             ║
║                │  Canon Bubble-Jet BJ-300              │             ║
║                │ ▊Epson EPL-5200▊                      │             ║
║                │  HP LaserJet 4050 N PCL 6             │             ║
║                │  HP LaserJet 4050 N PS                │             ║
║                │  Linotronic 300 v47.1                 │             ║
║                │  MS Publisher Color Printer           │             ║
║                │  MS Publisher Imagesetter             │             ║
║                │  Star NL-10                           │             ║
║                └────────┤ <Esc> to quit Menu ├─────────┘             ║
║                                                                      ║
║                                                                      ║
║ ═ (C) Copyright Trevor Caswell 1987-2001  All rights reserved  Version 3.86 ═ ║
╚══════════════════════════════════════════════════════════════════════╝
```

Figure 2.1

2.4   User Interface menu

The main menu screen will then appear as in Figure 2.2.

By selecting options from this menu you will be able to direct the program to perform certain tasks. These tasks are described in detail in Sections 3 through 12.

```
╔══════════ SAASTAN - User Interface (AS/NZS 1158.1.1:1997) ══════════╗
║                                                                      ║
║           ┌─[ USER INTERFACE MENU ]─────────────────────────┐        ║
║           │ 1   MODE 1 Input (Luminaire Evaluation)          │        ║
║           │ 2  ▊MODE 2 Input (Individual Installation Design)▊│       ║
║           │ 3   MODE 3 Input (Installation Performance Analysis)│      ║
║           │ Batch Mode...                                    │        ║
║           │ View last Spacing range results                 │        ║
║           │ Insert luminaire/s into the UIS Library          │        ║
║           │ Delete/Change luminaire reference number/s...    │        ║
║           │ Listing of luminaires in Library                │        ║
║           │ Curve spacing adjustment                        │        ║
║           │ Modify manufacturer names                       │        ║
║           │ Terminate program                               │        ║
║           └─────────────────────────────────────────────────┘        ║
║                                                                      ║
║                       265K Free Conventional Memory                  ║
║                                                                      ║
║                         Serial No. 911230                            ║
║ ═ (C) Copyright Trevor Caswell 1987-2001  All rights reserved  Version 3.86 ═ ║
╚══════════════════════════════════════════════════════════════════════╝
```

Figure 2.2

2.5   Menu operation

As mentioned before, Figure 2.2 gives an example of a menu used in the program. Selecting an option from a menu can be done in one of three ways:-

- Use the up and down cursor key to move the highlight bar up and down till it is over the desired option, then press the <Enter> key or

- Press the key of the first letter of the desired option (Do Not press the <Enter> key in this case) or

- Move the mouse forward and backward to move the highlight bar up and down, click the Right mouse button when it is over the desired option.

By pressing the <Esc> key (or holding down the Left mouse button and clicking the Right mouse button) no action will be taken with the current menu and control of the program will return to an earlier point in the program. Help on the menu option highlighted can be activated by pressing the <F1> key.

2.6   Data input screen operation

The input of data into the software (i.e. response to question fields 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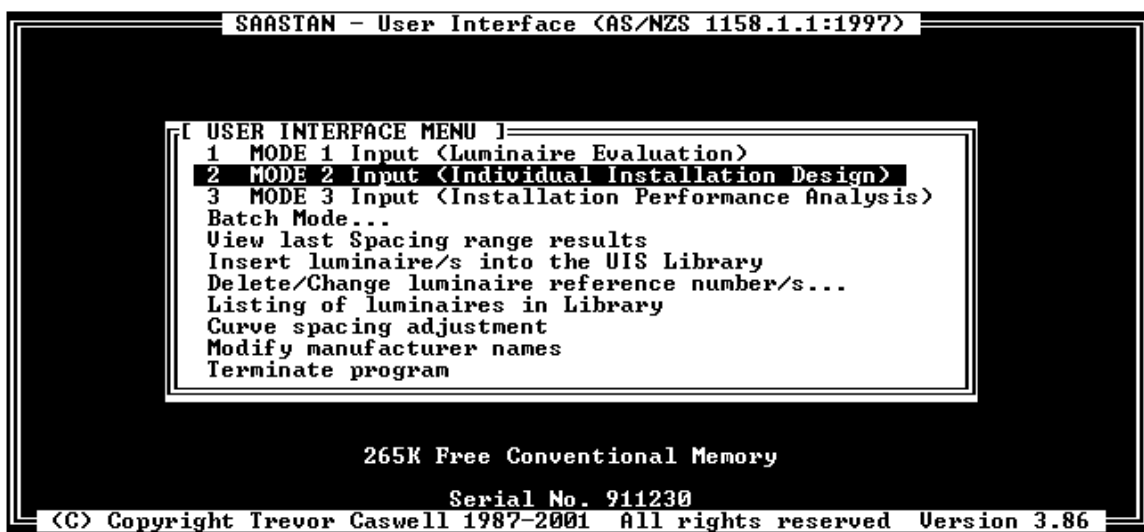 white on the sample screens in this manual) that indicates the maximum width of data that can be input. **Figure 3.1** is an example of one of these screens with several input fields. Inputting data and moving about the fields is done by pressing the keys as described below. Some fields may already contain 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 validation and 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).

2.7   Help facility

Context sensitive Help is available at virtually every point in the program by simply pressing the <F1> key. This help will specifically provide information on menu options, data input fields and output display screens. More general help is provided if you press the <F1> key a second time. As this Help facility is now built into the program this manual will not describe in great detail every aspect of it but will instead give the general flow of the program. Please use the Help facility when specific help is required during use of the program. An example of a Help screen is shown in Figure 2.3.

```
┌──SAASTAN ─ User Interface ⟨AS/NZS 1158.1.1:1997⟩──────┐
│▓▓SPECIFIC HELP ─ ⟨F1⟩ or ⟨Right⟩ again gives General Help▓│
│                                                          │
│          MODE 2 Input ⟨Individual Installation Design⟩    │
│                                                          │
│         Select this menu item when you want to perform Mode 2 │
│      calculations.  A further screen will appear into which you │
│      input data on the luminaire type and road layout etc..  A │
│         summary screen of the results will be automatically      │
│                      displayed when completed.               │
│                                                          │
│      12                    ─── End of Help ───            │
│▓▓▓▓▓⟨Esc⟩ or ⟨Left⟩ to exit▓▓▓▓▓                        │
│     Curve spacing adjustment                             │
│     Modify manufacturer names                            │
│     Terminate program                                    │
│                                                          │
│                                                          │
│              261K Free Conventional Memory               │
│                                                          │
│                   Serial No. 911230                      │
│▓⟨C⟩ Copyright Trevor Caswell 1987─2001  All rights reserved  Version 3.86▓│
```

Figure 2.3

2.8   Initialisation file

As will be mentioned later in Section 12 the manufacturer names for use in the Library can be selected by the user and are as contained in the file **UIS97.INI,** called the *initialisation file*. The contents of this file consist of up to eight short lines (maximum 16 characters on each line), corresponding to Manufacturers #1 through #8.

The following is the initialisation file supplied with the User Interface program when purchased and are the defaults used where none are supplied.

Manufacturer #1
Manufacturer #2
Manufacturer #3
Manufacturer #4
Manufacturer #5
Manufacturer #6
Manufacturer #7
Manufacturer #8

Edit the configuration file with any text editor (eg. NOTEPAD.EXE, WORDPAD.EXE etc.) and replace these names with the ones you wish to use for your set up. Alternatively, use the 'Modify manufacturer names' option from the main menu (see Section 12 for more details).

3.   MODE 1 INPUT (LUMINAIRE EVALUATION)

This option obtains information from the user on the road and installation geometry for the calculation of luminance and light technical parameters associated with MODE 1 of the Code (i.e. evaluates the general performance of a particular luminaire).

3.1   Luminaire and layout details

The screen as shown in Figure 3.1 will be displayed for you to enter the required data on the luminaire and road layout. Even though the field 'Lighting category' is displayed and a value must be input in the field the summary results will show compliance for all the Categories.

```
╔═══════════════ SAASTAN - User Interface (AS/NZS 1158.1.1:1997) ═══════════════╗
║ Job name: SAA STAN MODE 2                                                     ║
║                                                                               ║
║            Lighting category: V3                                              ║
║      Luminaire reference number or                                            ║
║         Photometric data file name: 1                                         ║
║                                                                               ║
║      Total luminous flux: 25     Klms   ┌── *** Arrangement No. *** ──┐      ║
║      Maintenance factor: 1               │ Single carriageway:-         │      ║
║           Upcast angle: 0   Degrees      │  1  Single sided (left)      │      ║
║   ┌─────────────┐                        │  2  Single sided (right)     │      ║
║   │ <F3> for    │  Arrangement No.: 3 <──┤  3  Staggered                │      ║
║   │ luminaire   │                        │  4  Opposite                 │      ║
║   │ list        │  Mounting height: 10.5 m│ Divided road:-              │      ║
║   └─────────────┘                        │  5  Opposite                 │      ║
║                                          │  6  Central                  │      ║
║   ┌─────────────┐                        │  7  Twin staggered           │      ║
║   │ <F4> for    │                        │  8  Twin opposite            │      ║
║   │ Directory   │                        │                              │      ║
║   │ file list   │                        │  0  Arrangements 1,3,4,5 & 6 │      ║
║   └─────────────┘                        └──────────────────────────────┘      ║
║                                                                               ║
╠═══ (C) Copyright Trevor Caswell 1987-2001  All rights reserved  Version 3.86 ═╣
 <F1>=Help <Shft+Space>=Erase field <F9>=Ditto field
```

Figure 3.1

A handy feature should you forget the luminaire code number is to press the <F3> key. This key will activate, via a sorting menu, a pop up window displaying all the luminaires in your Library. From this window the number can be memorised and input in the appropriate field on the previous screen. Displaying luminaires in the Library is dealt with in more detail in Section 10 with an example of the screen displayed.

Also, by using <F4> you can display a file selection directory window where you can select a file containing the photometric I-table data in cases where the luminaire under investigation is not included in your Library. Figure 3.2 gives an example of this window display.

When all the required data has been input press the <Enter> key for the program to continue by firstly saving this data to the file SAADAT and secondly executing the SAASTAN program. Several messages will appear on the screen indicating these operations.

3.2   Execution time

Time to execute the SAASTAN program will depend on the type and quality of computer used, typically on a Pentium III 500Mhz it is about 3 to 6 seconds.

3.3   Output

When the SAASTAN program is complete the computer will make a high frequency sound to alert the user, and the results will be displayed in the summary format as shown in Figure 3.3. Note that the last five columns advise whether the combination complies with the specific lighting category.
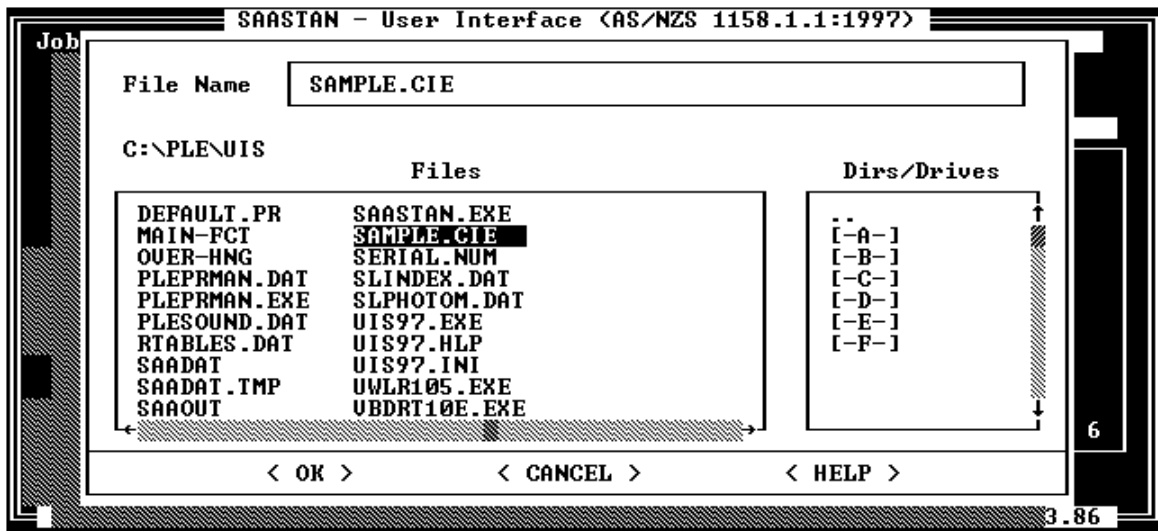
```
╔═══════════════════════ SAASTAN — User Interface <AS/NZS 1158.1.1:1997> ═══════════════════╗
║ Job                                                                                        ║
║                                                                                            ║
║        File Name      SAMPLE.CIE                                                            ║
║                                                                                            ║
║        C:\PLE\UIS                                                                           ║
║                              Files                                    Dirs/Drives          ║
║        ┌──────────────────────────────────────────┐              ┌──────────────┐          ║
║        │ DEFAULT.PR        SAASTAN.EXE             │ ↑            │ ..           │ ↑        ║
║        │ MAIN-FCT          SAMPLE.CIE              │              │ [-A-]        │          ║
║        │ OVER-HNG          SERIAL.NUM              │              │ [-B-]        │          ║
║        │ PLEPRMAN.DAT      SLINDEX.DAT             │              │ [-C-]        │          ║
║        │ PLEPRMAN.EXE      SLPHOTOM.DAT            │              │ [-D-]        │          ║
║        │ PLESOUND.DAT      UIS97.EXE               │              │ [-E-]        │          ║
║        │ RTABLES.DAT       UIS97.HLP               │              │ [-F-]        │          ║
║        │ SAADAT            UIS97.INI               │              │              │          ║
║        │ SAADAT.TMP        UWLR105.EXE             │              │              │ ↓        ║
║        │ SAAOUT            UBDRT10E.EXE            │ ↓            └──────────────┘       6  ║
║        └──────────────────────────────────────────┘                                        ║
║              < OK >             < CANCEL >             < HELP >                       3.86  ║
╚════════════════════════════════════════════════════════════════════════════════════════════╝
```

Figure 3.2

```
╔═══════════════════════ SAASTAN — User Interface <AS/NZS 1158.1.1:1997> ═══════════════════╗
║ [Use cursor keys to scroll display — <S> for Summary print — <Esc> to Exit] ─────────────  ║
║                                                                                            ║
║   SAA STAN MODE 2                                                                          ║
║                                                                                            ║
║   LUMINAIRE      NO    1    250W SCO SON-E            LAMP FLUX       25.00 K-LM            ║
║                                                      MAINTENANCE                            ║
║                                                           FACTOR      1.00                  ║
║                                                      UPCAST            .00 DEG              ║
║                                                                                            ║
║    ARRANGEMENT   NO    3    STAGGERED;SING C/WAY     MEDIAN WIDTH     .00 M                 ║
║  .                                                                                         ║
║  .                                                                                         ║
║  I   ARR  H   WK   O/H   S   AV-L   UO    UL  ESL  ESR   UWLR   TI V1 V2 V3 V4 V5           ║
║  ***************************************************************************************    ║
║  1   3 10.5  10   .00   45  1.29   .45   .83  92   92   1.69   16  -  -  Y  Y  Y            ║
║  2   3 10.5  10   .00   50  1.16   .41   .84  92   92   1.69   16  -  -  Y  Y  Y            ║
║  3   3 10.5  10   .00   55  1.05   .38   .75  92   92   1.69   16  -  -  Y  Y  Y            ║
║  4   3 10.5  10   .00   60  0.96   .37   .69  92   92   1.69   17  -  -  -  Y  Y            ║
║  5   3 10.5  10   .00   65  0.89   .35   .60  92   92   1.69   17  -  -  -  Y  Y            ║
║  6   3 10.5  12   .00   45  1.14   .43   .85  94   94   1.69   15  -  -  Y  Y  Y            ║
║  7   3 10.5  12   .00   50  1.02   .39   .85  94   94   1.69   15  -  -  Y  Y  Y            ║
║                                                                                            ║
║  <C> Copyright Trevor Caswell 1987-2001   All rights reserved   Version 3.86               ║
╚════════════════════════════════════════════════════════════════════════════════════════════╝
```
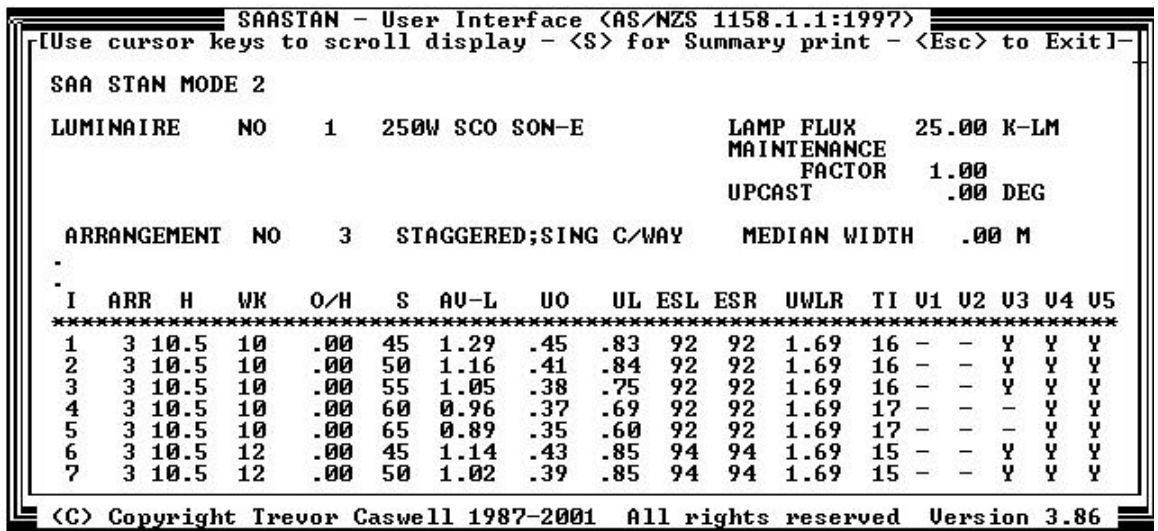
Figure 3.3

4.   MODE 2 INPUT (INDIVIDUAL INSTALLATION DESIGN)

This option solicits information from the user on the road and installation geometry for the calculation of luminance and light technical parameters associated with MODE 2 of the Code (i.e. evaluates an individual installation).

4.1   Luminaire and layout details

The screen as shown in Figure 4.1 will be displayed for you to enter the required data on the luminaire and road layout. This screen is similar to that of Figure 3.1 but with several additional fields on the lower part of the screen.
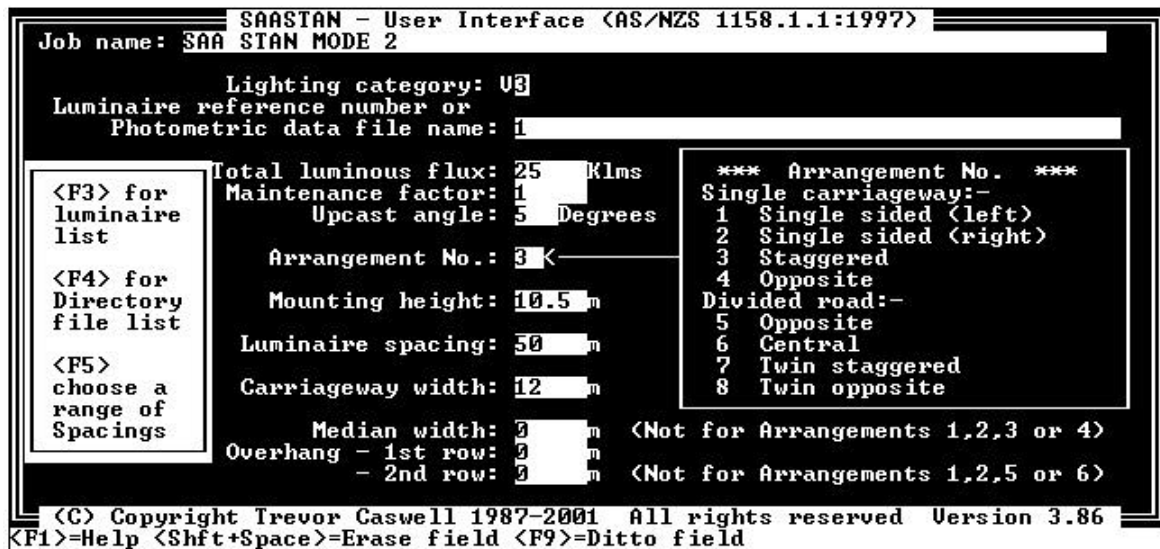
Figure 4.1

A handy feature should you forget the luminaire code number is to press the <F3> key. This key will activate, via a sorting menu, a pop up window displaying all the luminaires in the Library. From this window the number can be memorised and input on this screen.

Also, by using <F4> you can display a file selection directory window whereby you can select a file containing the photometric I-table data in cases where a luminaire is not included in the Library.

When all the required data has been input press the <Enter> key for the program to continue by firstly saving the data to the file SAADAT and secondly executing the SAASTAN program. Several messages may appear on the screen indicating these operations.

4.2   Execution time

Time to execute the SAASTAN program will depend on the type and quality of computer used. Typically on a Pentium III 500Mhz, it is about 1 to 3 seconds.

4.3   Output

When the SAASTAN.EXE program is complete the computer will make a high frequency sound to alert the user, and the results will be displayed in the summary format as shown in Figure 4.2. Note that the centre right hand side of the screen shows the calculated parameters. Where compliance is not met then the minimum or maximum value not attained will be shown.
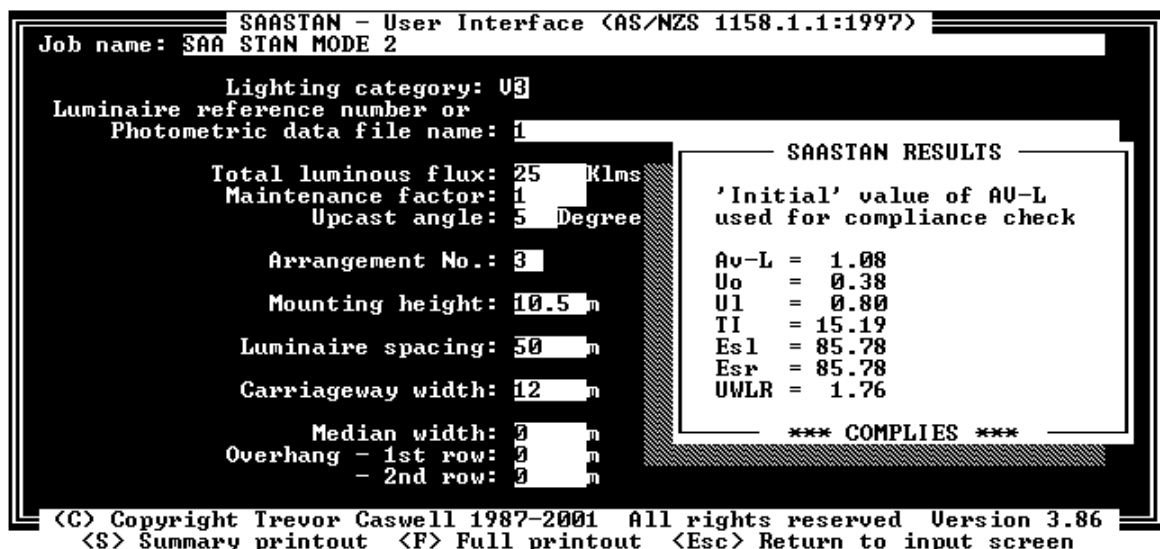
Figure 4.2

4.4   Calculating for a spacing range

Pressing the <F5> key (in lieu of the <Enter> key) after inputting Mode 2 data (Figure 4.1) will invoke the unique feature to execute SAASTAN for a range of spacings and produce a summary compliance table. After pressing <F5> a pop up data input screen, Figure 4.3, will appear into which you input the spacing range you want to examine.

```
┌──────────────────────────────────────┐
│ Spacing range - Minimum: 40    m      │
│               - Maximum: 80    m      │
│         Increment distance: 5     m   │
└──────────────────────────────────────┘
```

Figure 4.3

The output from this spacing run is shown in Figure 4.4.

5.   MODE 3 INPUT (INSTALLATION PERFORMANCE ANALYSIS)

This option requires information from the user to be input on the road and installation geometry for the calculation of luminance and light technical parameters associated with MODE 3 of the Code (i.e. analyses performance of an installation in more detail).

This mode should only be used where a variation in the observer position, calculation parameters and road surface conditions are required for a particular application. Accordingly, more detailed input is required than for the Mode 1 and 2 described in the previous sections.

5.1   Luminaire and layout details

The screen as shown in Figure 5.1 will be first displayed for you to enter the required data on the luminaire and road layout.

```
┌[Use cursor keys to scroll display - <S> for Summary print - <Esc> to Exit]──┐
│              Results for SAASTAN runs with varying Spacings                  │
│ .                                                                           │
│      Job name: SAA STAN MODE 2                                              │
│ .                                                                           │
│      Lighting category: V3                                                  │
│      Luminaire reference number: 1        Luminous flux: 25 Klms            │
│      Upcast angle: 5 Degrees              Arrangement: 3                     │
│      Mounting height: 10.5 m              Carriageway width: 12 m            │
│      Maintenance factor: 1                                                   │
│      Overhang 1st row: 0 m                Overhang 2nd row: 0 m             │
│ .                                                                           │
│ Spacing   AV-L      UO      UL     UWLR     TI      ESL      ESR    Comply   │
│  (m)    ()=1.00) ()=0.33) ()=0.5) (=<6) (=<20) ()=50) ()=50)                 │
│     or ()=1.10) ()=0.31)    "       "      "       "       "                 │
│ ==========================================================================  │
│   40.0    1.35    0.48    0.78    1.76   14.96   85.78   85.78 - YES         │
│   45.0    1.20    0.41    0.78    1.76   15.09   85.78   85.78 - YES         │
│   50.0    1.08    0.38    0.80    1.76   15.19   85.78   85.78 - YES         │
│   55.0    0.98    0.35    0.75    1.76   15.35   85.78   85.78 - NO          │
│   60.0    0.90    0.32    0.74    1.76   15.53   85.78   85.78 - NO          │
│   65.0    0.83    0.28    0.66    1.76   16.30   85.78   85.78 - NO          │
└─────────────────────────────────────────────────────────────────────────────┘
```

Figure 4.4

A handy feature should you forget the luminaire code number is to press the <F3> key. This key will activate, via a sorting menu, a pop up window displaying all the luminaires in the Library. From this window the number can be memorised and input on the previous screen in the appropriate field.

Also, by using <F4> you can display a file selection directory window where you can select the a file containing the photometric I-table data for a luminaire in cases where it is not included in the Library. When all the required data has been input press the <Enter> key for the program to continue with another screen.
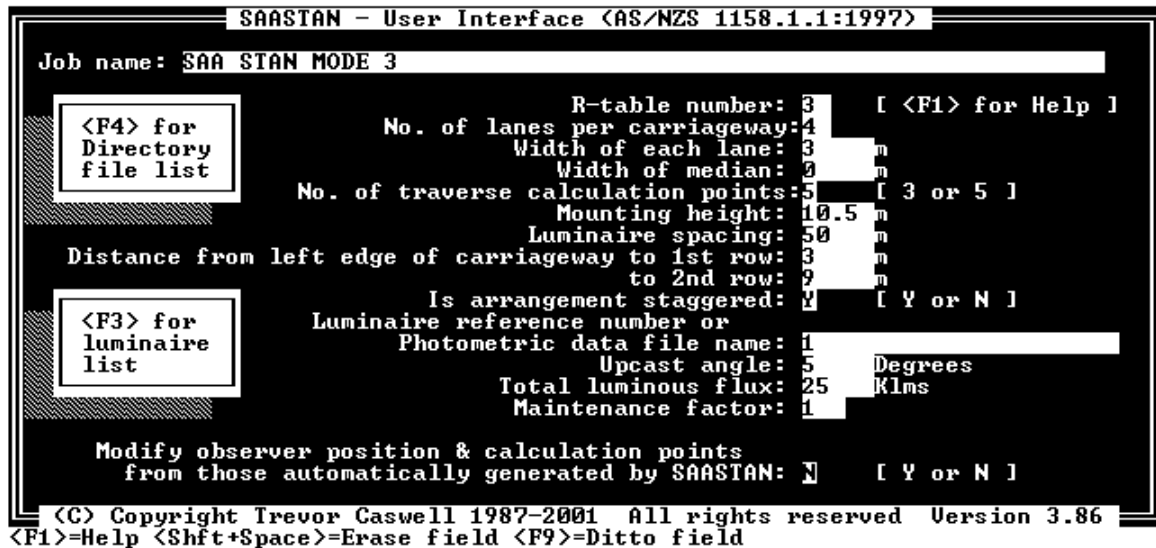
Figure 5.1

5.2   Observer details

If you answered 'Y" to the 'Modify observer position.....' field on the bottom line of the screen then the screen in Figure 5.2 will appear to input the relevant observer data.
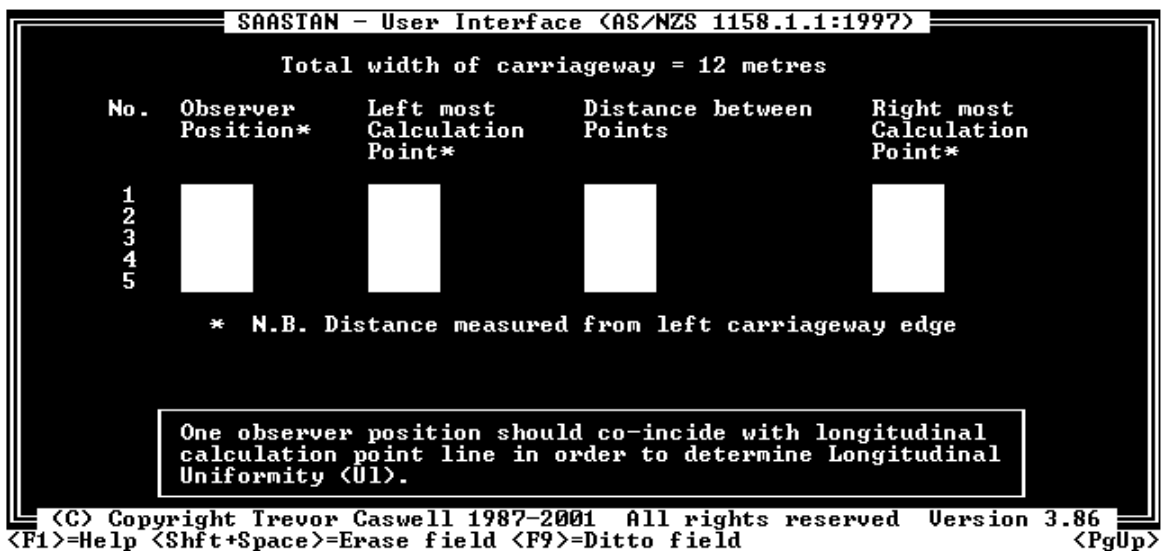

Figure 5.2

5.3   User supplied R-Table

If you entered '99' in the 'R-Table number' field on the input screen shown in Figure 5.1 then the screen as in Fig 5.3 will next appear where you enter the file name containing the user specified R-table. By using <F4> you can display a file selection directory window where you can easily select the file containing this R-Table data.

5.4   Execution time

When all these screens have been completed the program will continue by firstly saving the data to the file SAADAT and secondly executing the SAASTAN program. Several messages may appear on the screen indicating these operations.

Time to execute the SAASTAN program will depend on the type and quality of computer used. Typically on a Pentium III 500Mhz, it is about 1 second.

5.5   Output

When the SAASTAN program is complete the computer will make a high frequency sound to alert the user, and the results will be displayed directly as output by SAASTAN as shown in Figure 5.4. At this point a summary screen is not provided to advise of compliance with a particular lighting category.

```
╔══════════ SAASTAN - User Interface (AS/NZS 1158.1.1:1997) ══════════╗
║                                                                      ║
║                                                                      ║
║                                                                      ║
║                                                                      ║
║                                                                      ║
║                                                                      ║
║   File name of user supplied R-Table: ▐                            ▌ ║
║                                                                      ║
║                                                                      ║
║                                                                      ║
║                    ┌─────────────────────────────────┐             ║
║                    │ <F4> To display directory/select file │        ║
║                    └─────────────────────────────────┘             ║
║                                                                      ║
║                                                                      ║
║                                                                      ║
╚══ (C) Copyright Trevor Caswell 1987-2001  All rights reserved  Version 3.86 ══╝
<F1>=Help <Shft+Space>=Erase field                                    <PgUp>
```
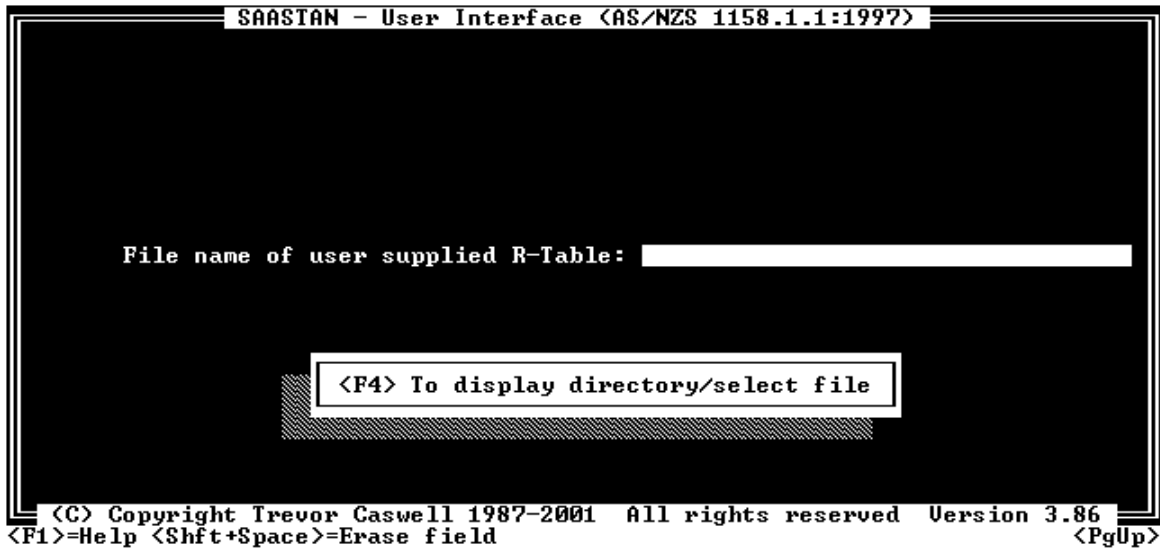
Figure 5.3

6.   BATCH MODE

This section describes the operation of the Batch processing mode built into the UIS97 program. This mode on the surface does not affect the normal running of the User Interface except that the execution of the SAASTAN program is not carried out until specifically directed.

As few as 1 and as many as 99 jobs can be stored for processing at a later time period by simply selecting individual Modes and responding to the questions in the normal way. Due to the length of time that SAASTAN takes to run (on older 486 machines) this later time period could be say during lunch, overnight or over a weekend. All output from the calculations is in the respective summary format for the Mode selected and is automatically directed to the printer.

NOTE: At the moment the Spacing Range facility is not available under this mode of operation.

6.1   Batch mode menu

The option begins with the sub-menu as shown in Figure 6.1. The options on the menu are self explanatory but if they are not quite clear then use the Help facility by pressing <F1> over option in doubt.
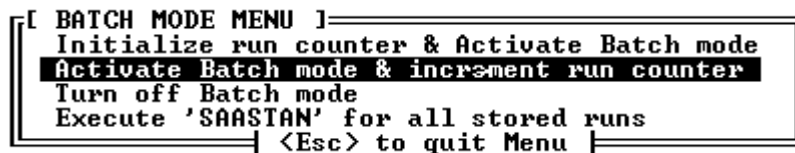
```
╔═[ BATCH MODE MENU ]═══════════════════════╗
║   Initialize run counter & Activate Batch mode ║
║ ▌ Activate Batch mode & increment run counter ▐ ║
║   Turn off Batch mode                          ║
║   Execute 'SAASTAN' for all stored runs        ║
╚═══════════════╡ <Esc> to quit Menu ╞═══════╝
```

Figure 6.1

A quick examination of the menu will show that you can oscillate between Batch mode and Normal mode whenever you like by either Activating or Turning off Batch mode. It is not necessary to run SAASTAN in any particular sequence.

```
                         SAA STAN  -  AS 1158.2 (1986)
                         ***************************
   SAA              STAN                MODE              3
3
   -------------------------------------------------------
-------------------
  ROAD DESCRIPTION
  ---------------
   NO. OF CARRIAGEWAYS              1
   NO. OF LANES PER CARRIAGEWAY     4
   WIDTH OF LANE                 3.00 M
   REFLECTION PROPERTIES GIVEN BY R-TABLE NO    3.000
CIE STANDARD R3
  LIGHTING INSTALLATION
  --------------------
   THE INSTALLATION HAS  2 ROW(S) OF LUMINAIRES
   LIGHT DISTRIBUTION NO    1                 250W SCO
SON-E
         UPCAST ANGLE              5.00  DEGREES
         LUMINOUS FLUX OF LAMP   25.000 KILO-LUMENS
         MAINTENANCE FACTOR       1.000
         MOUNTING HEIGHT         10.50  M
         LUMINAIRE SPACING      100.00  M
         POSITION OF ROWS
         RELATIVE TO LEFTHAND EDGE OF CARRIAGEWAY
         ROW NO   POSITION     C-O PLANE
                  (METERS)     POINTS
            1       .00        TOWARDS OBSERVER
            2     12.00        AWAY FROM OBSERVER
         THE ARRANGEMENT IS STAGGERED
  LUMINANCE DISTRIBUTION
  ----------------------
   OBSERVER POSITION: R =   3.00  S =    .00
    R / S   60.0  65.0  70.0  75.0  80.0  85.0  90.0
95.0 100.0 105.0

********************************************************
****************
       .30 *    .81  1.11  1.53  1.86  1.99  2.04  2.12
2.30  2.23  1.86
       .90 *    .97  1.29  1.72  2.03  2.09  2.08  2.13
2.29  2.23  1.89
      1.50 *   1.08  1.34  1.71  1.97  2.02  2.01  2.02
2.17  2.10  1.86
      2.10 *   1.01  1.24  1.54  1.74  1.77  1.80  1.84
1.93  1.83  1.76
      2.70 *    .92  1.05  1.24  1.44  1.52  1.53  1.58
1.70  1.55  1.64
      3.30 *    .83   .88  1.01  1.21  1.28  1.27  1.35
1.48  1.36  1.52
      3.90 *    .78   .80   .88  1.04  1.07  1.06  1.15
1.30  1.19  1.36
      4.50 *    .77   .77   .79   .90   .91   .90   .99
1.13  1.03  1.20
      5.10 *    .78   .76   .71   .80   .79   .81   .88
1.00   .91  1.09
      5.70 *    .80   .77   .67   .74   .72   .73   .78
 .91   .82  1.01
      6.30 *    .85   .83   .66   .70   .67   .69   .73
 .84   .78   .95
      6.90 *    .87   .86   .68   .69   .64   .66   .71
 .80   .76   .93
      7.50 *    .91   .89   .66   .66   .64   .65   .71
 .78   .76   .93
      8.10 *    .96   .95   .66   .62   .57   .62   .71
 .78   .77   .93
      8.70 *   1.04  1.00   .67   .59   .52   .56   .64
 .72   .78   .94
      9.30 *   1.12  1.04   .68   .57   .49   .50   .57
 .64   .69   .87
      9.90 *   1.20  1.09   .70   .56   .45   .46   .51
 .57   .62   .76
     10.50 *   1.27  1.11   .72   .55   .42   .41   .46
 .50   .54   .65
```

```
     11.10  *   1.33    1.09     .73     .54     .40     .38     .41
.44     .47     .55
     11.70  *   1.35    1.07     .72     .52     .38     .35     .37
.39     .41     .46

*************************************************************
***************
  LIGHT TECHNICAL PARAMETERS
  --------------------------
  OBSERVER POSITION: R =   3.00  S =    .00
       AVERAGE                                        LUMINANCE
1.07 CD/SQ-M
       OVERALL                                        UNIFORMITY
.33
        SURROUND  ILLUMINANCE                              LEFT
85.78 PERCENT
                                                         RIGHT
85.78 PERCENT
       VEILING                                        LUMINANCE
.33 CD/SQ-M
       THRESHOLD                                      INCREMENT
20.36 PERCENT
       SPECIFIC                 LUMINAIRE                 INDEX
1.72
       DISCOMFORT          GLARE          CONTROL          MARK
4.05
  OBSERVER POSITION: R =   1.50  S =    .00
       LONGITUDINAL                                   UNIFORMITY
.25
   OBSERVER POSITION: R =   4.50  S =    .00
       LONGITUDINAL                                   UNIFORMITY
.52
```

Figure 5.4

Depending on which option from the menu you choose the 'Batch Mode' line on Figure 2.2 will change to indicate whether it is active and the number of runs stored. Remember when Batch mode is not activated, SAASTAN will be run as soon as data for Modes 1, 2 or 3 is entered.

When you select the 'Execute....' option the screen will indicate progress of the calculations etc. for information. When complete press the <Space Bar> to return to the main menu. To abort the processing of runs simply press the <Esc> key and wait a moment for the current SAASTAN run to finish.

The printouts will be the same as described in the previous sections for the individual modes except they will be preceded by a line indicating the file (run no.) being processed and the start, finish and elapsed times for information.

The stored run files (SAADAT.R##) are NOT deleted when this option is executed, so they can be appended to and/or re-executed, if desired. To start from scratch in inputting Batch mode jobs, select the 'Initialise....' option from the menu to initialise the run counter.

7.   VIEW LAST SPACING RANGE RESULTS

This option will simply re-display the results from the last spacing range calculations as shown in Figure 4.4 - thus saving you the time in re-doing the calculations.

8.   INSERTING LUMINAIRE/S INTO THE UIS LIBRARY

This option is used to store photometric I-table data of luminaires into the Library files 'SLINDEX.DAT' and 'SLPHOTOM.DAT' used solely by the UIS97 program. The data required must be in the SAA/CIE standard format (see Section 14) and contained within a disk file.

A maximum of 200 luminaires can be stored in these Library files. Each luminaire in the library is assigned a unique number (called the luminaire reference number or code number) which is specified (in other parts of the program) to access the luminaire photometric data for Modes 1, 2 and 3 calculations.

8.1   File name selection

This option begins with the screen as shown in Figure 8.1, where the file name to load is input. Should you forget the file name, press <F4> and a file selection directory like window will appear from which you can select the file.
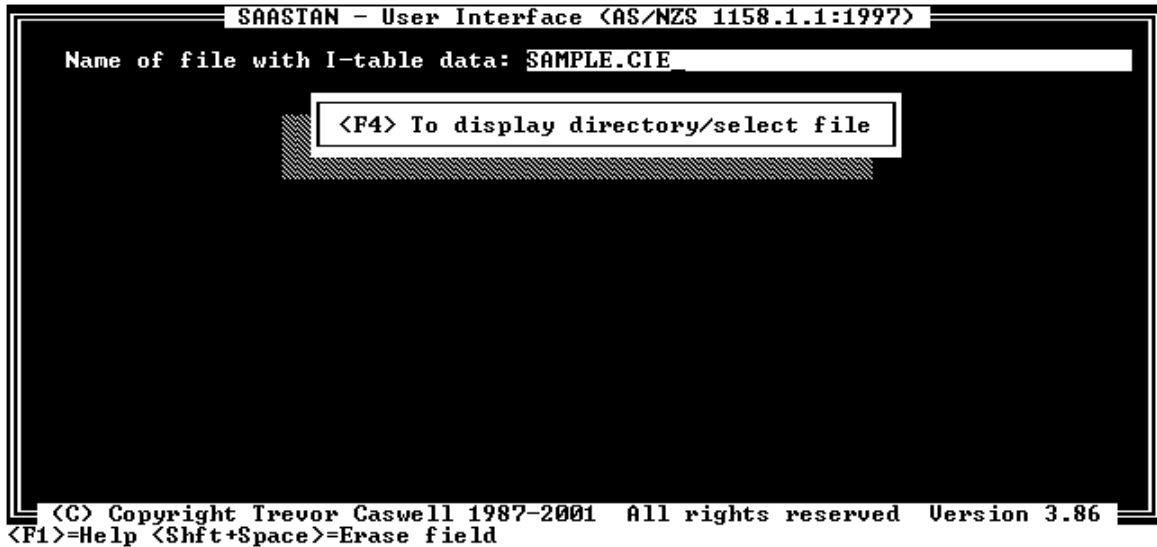

Figure 8.1

8.2   Manufacturer name menu

Once a file has been entered the menu in Figure 8.2 will appear to pick the Manufacturer name for which data is being loaded. Refer Section 12 for ways to change the names that appear on this menu (i.e. contents of file UIS97.INI).

Figure 8.2

8.3   Reference number

Once a Manufacturer has been selected the screen as in Figure 8.3 will appear into which you input the luminaire reference number and description. The reference number consists of exactly 4 digits as follows:-

Xyyy

where:

> **X**   is the manufacturer name code (1 - 9) fixed as selected from the previous menu
> **yyy**   is a unique three digit number between (001 - 999), usually a sequence of numbers relating back to the original I-table file name.

In the luminaire description field it is always a good idea to include the original file name of the I-table so that in the future you will be able to easily identify the luminaire should you update the Library.

If this luminaire is not required to be added then simply press the <Esc> key.
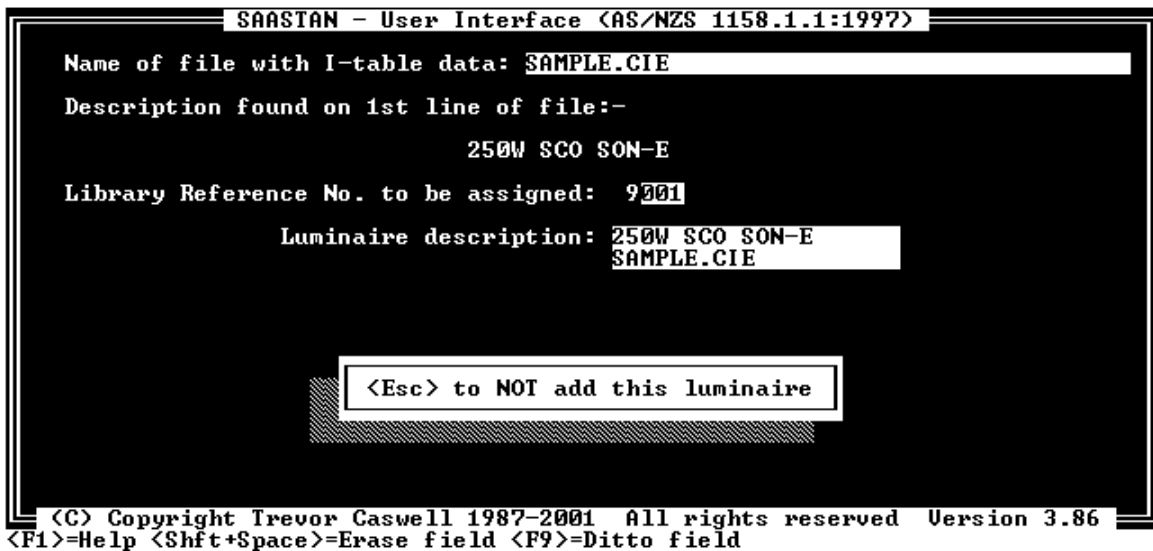
Figure 8.3

Providing no error occurs in reading the rest of the data from the file, the message as in Figure 8.4 will appear on the screen.
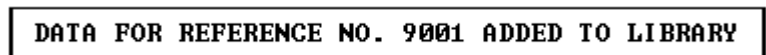
Figure 8.4

Clear this message by pressing the <Space> key and control of the program will return to the main menu.

8.4   Uniqueness of library files

It should be understood that the Library files SLINDEX.DAT and SLPHOTOM.DAT are a unique pair and as such should always be copied, backed-up or restored together. **Never use an old copy of the SLINDEX.DAT file with a new SLPHOTOM.DAT file or vice versa.**

While editing of the file SLINDEX.DAT with a text editor (eg. NOTEPAD.EXE) is possible it is NOT recommended as the sequence of data items may be altered and render the Library files useless.

8.5   Back up of data Files

Once the UIS97 program has been installed on your computer the only files that change besides SAADAT and SAAOUT (used by SAASTAN each run), are UIS97.INI, SLINDEX.DAT and SLPHOTOM.DAT. Some temporary working files are created by UIS97 but are usually deleted when finished with. Therefore, whenever luminaire data is added to the Library it is a good idea to make a backup copy of the above three files so that your Library can easily be restored in case of computer/hard disk failure. The programs themselves can be simply restored from the original program disk.

9.   DELETE/CHANGE LUMINAIRE REFERENCE NUMBER/S

This option allows a software managed renumbering and/or the deletion of luminaires from the Library index file SLINDEX.DAT.

9.1   Change/Delete menu

After selecting this option another menu will appear as in Figure 9.1 from which four choices can be made.
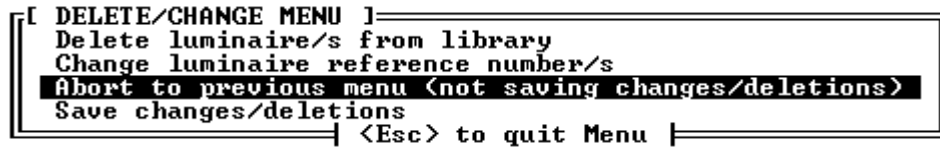
```
┌[ DELETE/CHANGE MENU ]══════════════════════════
│  Delete luminaire/s from library
│  Change luminaire reference number/s
│  Abort to previous menu (not saving changes/deletions)
│  Save changes/deletions
└════════════════╡ <Esc> to quit Menu ╞═══════════
```

Figure 9.1

9.1.1 Deleting luminaires

The first selection from the menu will display the screen as in Figure 9.2 into which you input the luminaire code number/s to be deleted. As previously, by pressing the <F3> key, a pop up window will display all the luminaires in the Library for information.

```
┌══════ SAASTAN — User Interface (AS/NZS 1158.1.1:1997) ══════┐
│                                                              │
│   Luminaire Reference Nos. to delete:  ┌────┐                │
│                                        │    │                │
│                                        │    │                │
│                                        │    │                │
│                                        │    │                │
│                                        │    │                │
│                                        └────┘                │
│                                                              │
│         ┌───────────────────────────────────────┐           │
│         │ <F3> For list of luminaires in Library │           │
│         └───────────────────────────────────────┘           │
│                                                              │
│══ (C) Copyright Trevor Caswell 1987-2001  All rights reserved  Version 3.86 ══│
<F1>=Help <Shft+Space>=Erase field <F9>=Ditto field
```
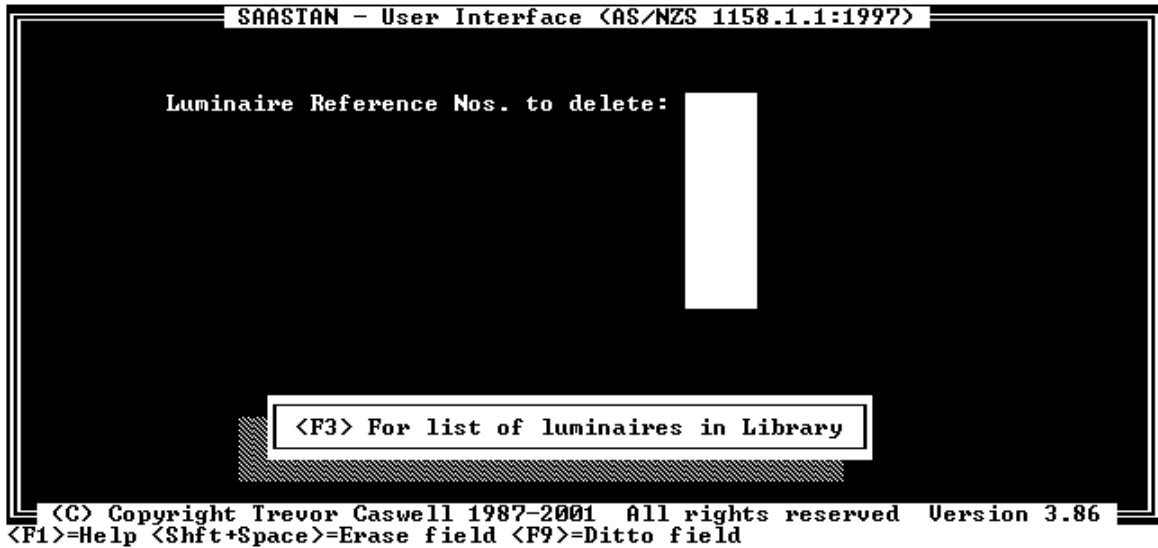
Figure 9.2

9.1.2 Changing reference numbers

The second selection from the menu will display the input screen as in Figure 9.3 where you input the current reference number and the new number you want assigned to it. As described in Section 8.3 the first digit of the luminaire reference number is the manufacturer code number. If this number is different between the current and new number then an error will be displayed as a warning, the change will nevertheless be made. If it was inadvertently changed then carry out the option again and reverse the change to correct it.

9.1.3 Not saving any changes

The third selection will abort back to the main menu without saving any alterations/deletions made to this point. A confirmation question will always be asked in case you selected this menu option accidentally.

9.1.4 Saving changes made

The fourth and last selection will adjust the Library index file to reflect the changes/deletions made. The program will then return to the main menu.
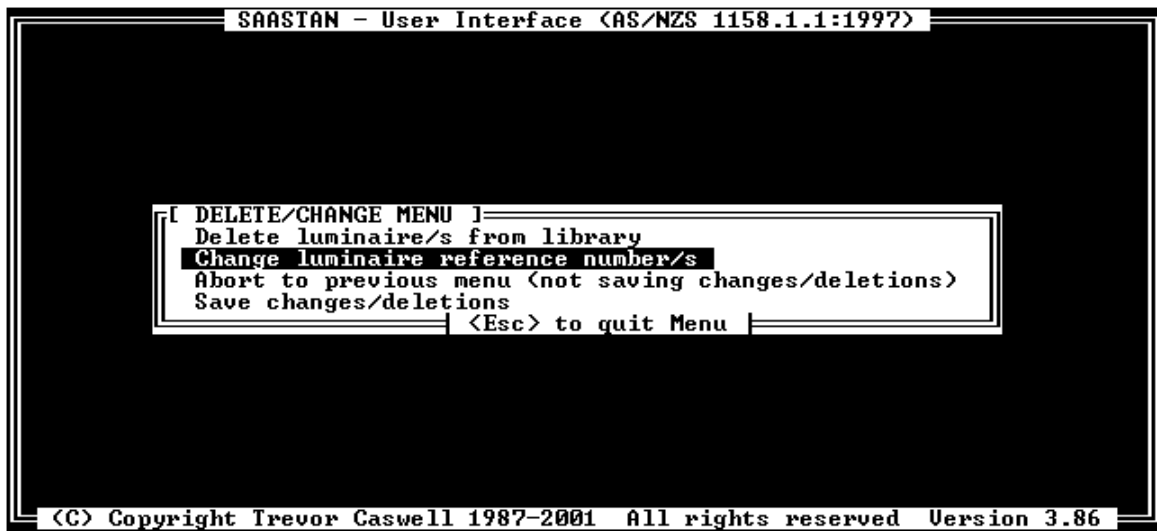
Figure 9.3

10. LISTING OF LUMINAIRES IN LIBRARY

This option produces on the screen (or printer) either a summary listing of all the available luminaires or the I-table data of one specific luminaire from the Library files. This listing can also be sorted in several different ways.

The first question that you will see when you select the 'Listing of luminaire....' option from the main menu is shown in Figure 10.1.
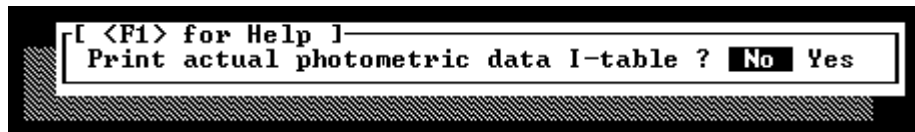

Figure 10.1

When selecting 'No' the program will continue as in Section 10.2, otherwise as in Section 10.1.

10.1 Printing actual I-table data

Selecting 'Yes' on the previous screen (Figure 10.1) the program will continue and ask if the azimuth and gamma angles are to be included in the data, see Figure 10.2.

Figure 10.2

After selecting 'No' or 'Yes' a screen will appear as in Figure 10.3 asking for the luminaire code number to list. Input the appropriate number and press the <Enter> key for the program to produce the listing on the screen. By pressing the <S> key the listing can be sent to the printer.

Figure 10.4 gives an example of part of the output generated if 'Yes' is selected from Figure 10.2 and Figure 10.5 gives an example of part of the output generated if 'No' is selected. You may notice that Figure 10.5 is in the same format as the original photometric data I-table.
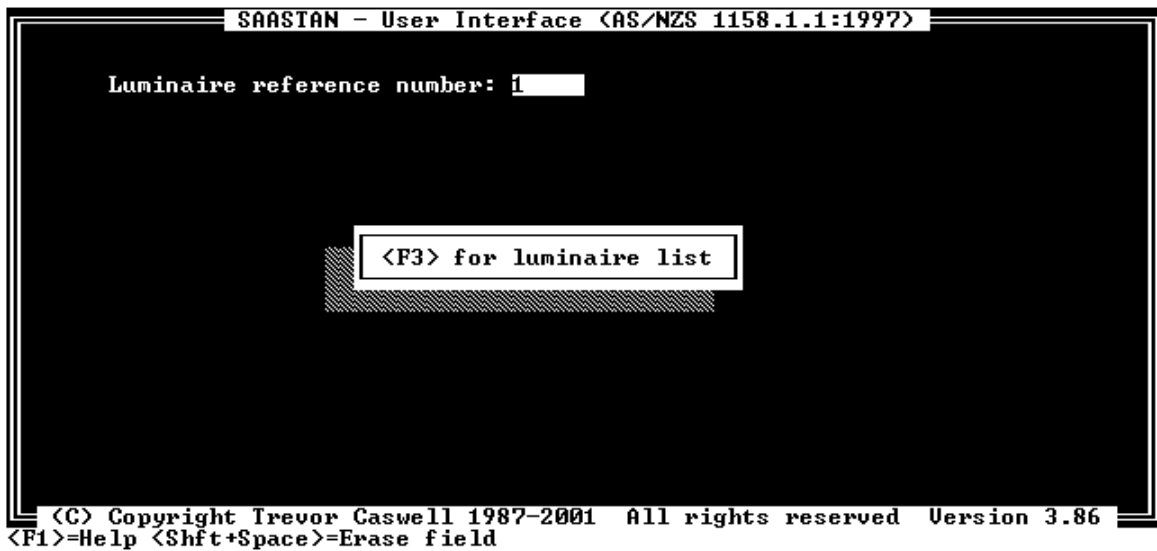
```
╔════════════ SAASTAN - User Interface <AS/NZS 1158.1.1:1997> ════════════╗
║                                                                          ║
║        Luminaire reference number: 1░░░░░                                ║
║                                                                          ║
║                                                                          ║
║                                                                          ║
║                                                                          ║
║                         ┌──────────────────────────┐                     ║
║                         │  <F3> for luminaire list  │                    ║
║                         └──────────────────────────┘                     ║
║                          ░░░░░░░░░░░░░░░░░░░░░░░░░░░░░                    ║
║                                                                          ║
║                                                                          ║
║                                                                          ║
║                                                                          ║
║  <C> Copyright Trevor Caswell 1987-2001  All rights reserved  Version 3.86 ║
╚══════════════════════════════════════════════════════════════════════════╝
<F1>=Help <Shft+Space>=Erase field
```

Figure 10.3

```
┌[Use cursor keys to scroll display - <S> for Summary print - <Esc> to Exit]─┐
│                                                                            │
│  Luminaire code number: 1                                                  │
│           Description: 250W SCO SON-E                                       │
│  .                                                                         │
│ ─────+────+────+────+────+────+────+────+────+────+────+────+────+────+──── │
│   C-> │ 270  285  300  310  315  320  325  330  335  340  345  350  355    0 │
│ ─────+────+────+────+────+────+────+────+────+────+────+────+────+────+──── │
│      0 │ 189  189  189  189  189  189  189  189  189  189  189  189  189  189 │
│     10 │ 185  186  189  190  190  188  187  188  190  189  188  187  187  191 │
│     20 │ 163  167  172  177  179  179  180  186  191  194  198  203  206  201 │
│     30 │ 121  136  152  161  166  168  172  180  188  202  215  224  233  238 │
│     35 │  95  113  135  140  142  145  152  165  179  197  215  233  243  248 │
│     40 │  86   96  110  120  126  127  138  147  164  180  212  235  251  252 │
│     45 │  65   83  102  110  116  124  131  142  159  183  211  235  254  260 │
│   47.5 │  61   79   96  105  113  120  130  145  165  188  213  238  257  263 │
│     50 │  59   75   94  104  109  117  130  149  170  192  217  242  260  268 │
│   52.5 │  61   72   89  102  107  115  131  152  174  197  222  247  263  269 │
│     55 │  65   70   80   94  104  116  131  153  176  201  227  250  265  271 │
│   57.5 │  63   68   78   93  103  114  132  153  177  202  226  247  265  272 │
│     60 │  62   69   77   91  100  113  130  151  176  200  223  243  265  267 │
│   62.5 │  61   69   77   90   98  111  128  149  173  195  215  239  263  267 │
│     65 │  60   69   77   89   97  110  126  145  166  184  205  233  261  276 │
└────────────────────────────────────────────────────────────────────────────┘
```

Figure 10.4

```
┌[Use cursor keys to scroll display - <S> for Summary print - <Esc> to Exit]─┐
│     1    1    0          250W SCO SON-E                                     │
│   189  189  189  189  189  189  189  189  189  189  189  189  189  189  189  189  189 │
│   189  189  189  189  189  189  189  189  189  189  185  186  189  190  190  188  187 │
│   188  190  188  187  187  191  190  190  190  188  186  185  184  182  178  177 │
│   174  170  165  163  167  172  177  179  179  180  186  191  194  198  203  206  201 │
│   207  208  208  205  200  194  186  179  172  166  157  145  135  121  136  152  161 │
│   166  168  172  180  188  202  215  224  233  238  237  233  225  215  205  192  177 │
│   167  160  153  141  126  113   95  113  135  140  142  145  152  165  179  197  215 │
│   233  243  248  243  236  226  212  194  177  159  146  136  130  121  104   97   86 │
│    96  110  120  126  127  138  147  164  180  212  235  251  252  243  225  203  182 │
│   162  143  128  117  109  103   92   82   73   65   83  102  110  116  124  131  142 │
│   159  183  211  235  254  260  242  218  193  166  140  123  111  104   97   92   82 │
│    68   61   79   96  105  113  120  130  145  165  188  213  238  257  263  244 │
│   218  195  168  140  123  110  103   98   90   75   65   60   59   75   94  104  109 │
│   117  130  149  170  192  217  242  260  268  249  224  199  168  143  125  113  105 │
│   100   94   82   65   60   61   72   89  102  107  115  131  152  174  197  222  247 │
│   263  269  252  228  200  170  147  130  118  109  102   93   80   66   60   65   70 │
│    80   94  104  116  131  153  176  201  227  250  265  271  256  230  201  175  154 │
│   137  124  112  102   93   80   67   62   63   68   78   93  103  114  132  153  177 │
│   202  226  247  265  272  257  230  197  175  157  140  130  116  104   93   79   68 │
│    62   62   69   77   91  100  113  130  151  176  200  223  243  265  267  258  229 │
└────────────────────────────────────────────────────────────────────────────┘
```

Figure 10.5

10.2   Sort order menu

If you do not select to print the actual photometric data table then you will get a summary listing of all the luminaires in the UIS Library. It begins with the menu as shown in Figure 10.6 where the sort order of the listing can be selected. These sort orders are self explanatory, the "Reference number" option being the usual one selected.
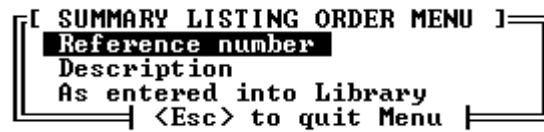
```
┌[ SUMMARY LISTING ORDER MENU ]═┐
│ Reference number              │
│ Description                   │
│ As entered into Library       │
└─────┤ <Esc> to quit Menu ├────┘
```

Figure 10.6

A sample of the screen display of the listing produced is shown in Figure 10.7. On this screen you use the up/down cursor keys or forward/backward mouse motion to scroll through it. <Ctrl>+<Home> and <Ctrl>+<End> can be used to quickly get to the start or end of the list.

```
┌[Use cursor keys to scroll display - <S> for Summary print - <Esc> to Exit]─┐
│                                                                            │
│    REF. NO.  MANUFACTURER        DESCRIPTION                               │
│    ×××××××××××××××××××××××××××××××××××××××××××××××××××××××××××××××××××××  │
│          1   SAA SAMPLE DATA     250W SCO SON-E                            │
│          2   ARRB SAMPLE DATA    250W SCO MBF/U                            │
│       9001   Miscellaneous       250W SCO SON-E      SAMPLE.CIE            │
│    ×××××××××××××××××××××××××××××××××××××××××××××××××××××××××××××××××××××  │
│                                                                            │
└────────────────────────────────────────────────────────────────────────────┘
```
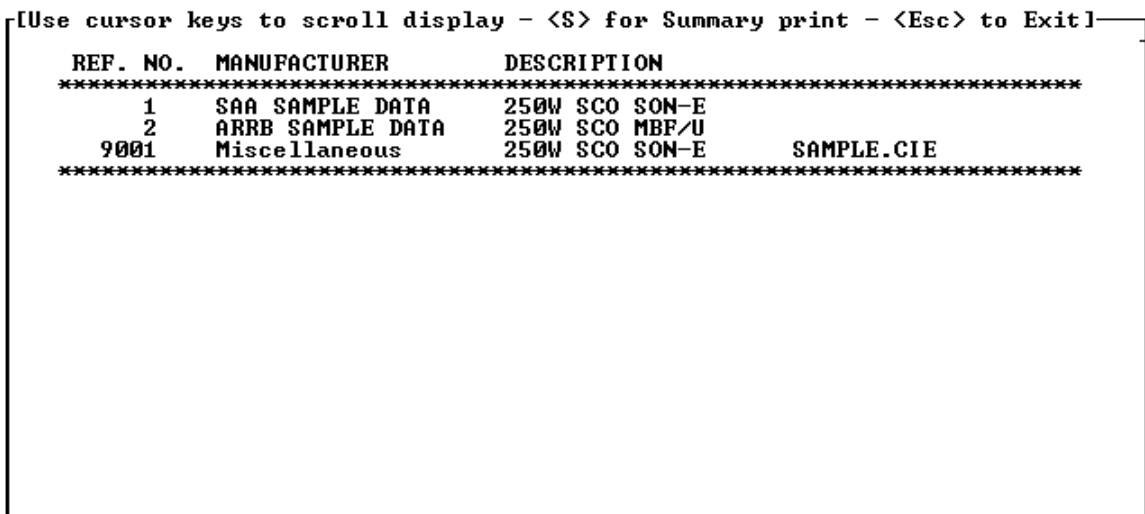
Figure 10.7

10.3   Hard copy output

To get a hard copy of this list on the printer simply press the <S> key, alternatively, to return to the main menu press the <Esc> key.

11.   CURVE SPACING ADJUSTMENT

This option calculates the reduction in the maximum spacing when the road under investigation goes around a curve. The adjustment is based on the radius of curvature and Fig 3.4 of AS/NZS1158.1.1 - 1997.

11.1   Straight road spacing and radius of curvature

The screen as shown in Figure 11.1 will be initially displayed. On this screen you would input the straight road spacing and the radius of curvature of the centre line of the roadway. If a value is present in the spacing field then this is simply the last value used in a Mode 2 or 3 calculation.

Figure 11.1

Once the fields on the above screen have been filled press the <Enter> key for the program to calculate the adjusted spacing. Refer to Figure 11.2 for an example of the output generated.

NOTE: No reduction in the straight road spacing is applicable for luminaires located on the inside of the curve where the radius exceeds 1000 metres or for luminaires located on the outside of the curve where the radius exceeds 500 metres. To get a hard copy of the results on your printer simply press the <S> key.
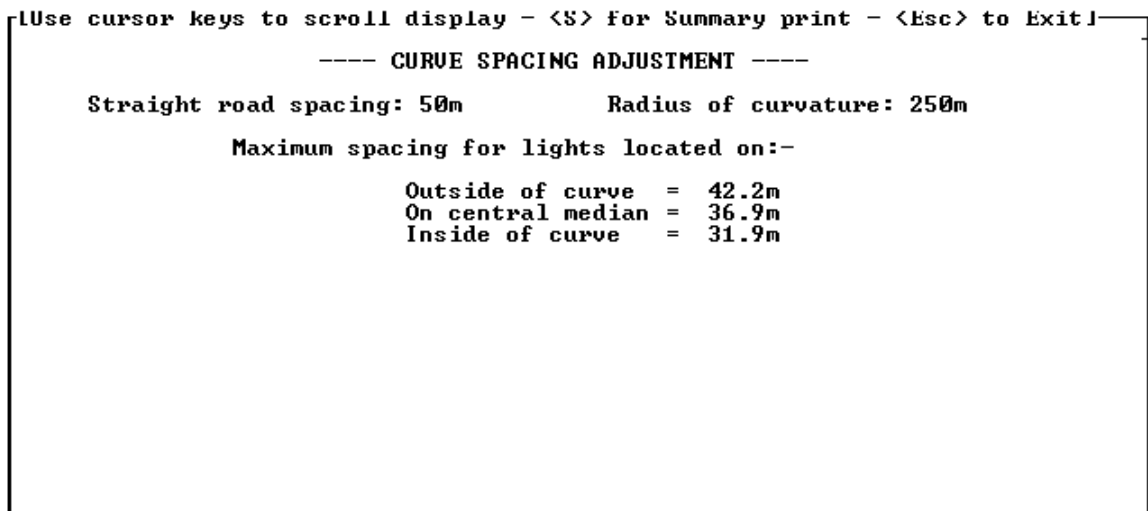
Figure 11.2

12.   MODIFY MANUFACTURER NAMES

Selecting this option will allow you to easily alter the Manufacturer names associated with luminaire reference numbers used in the luminaire Library. Figure 12.1 shows the input screen that will appear when this option is selected. Simply change the names as desired and press the <Enter> key to save them.
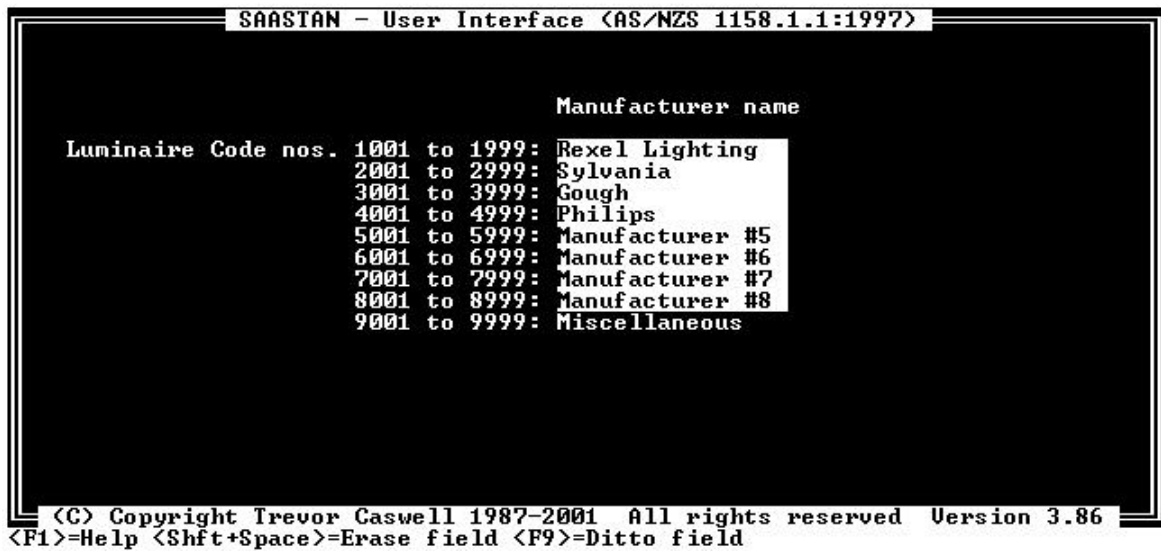
<div align="center">**Figure 12.1**</div>

13.   TERMINATE PROGRAM

This option simply closes all opened files used within the program and as the title implies terminates execution of UIS97. The screen will clear and operation of the computer will return to the MS-DOS operating system or your menu system from where UIS97 was launched. To restart UIS97 again after this point refer to Section 2.2.

13.1   Effect of terminating on Batch mode

Whether Batch mode is active or not, any stored runs will remain on disk and be recognised next time the program is started.

14.   SAMPLE CIE/SAASTAN PHOTOMETRIC DATA I-TABLE

The sample photometric I-table file provided with this program is stored in the file named SAMPLE.CIE. Part of this file is shown in Figure 14.1 and is the CIE/SAASTAN format as described in Table 4.2 of AS1158.2 -1986 and is the **only format accepted by this program and the SAA Code**. The file is easily recognisable by the second and subsequent lines containing numbers in a simple tabular form of 17 columns wide. While the file is not easily understandable by humans, its format is easily interpreted by computers. Refer Section 10.1 (Figure 10.5) for an alternate way of viewing an I-table already included in the UIS Library.

```
    1    1    0          250W SCO SON-E
189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189 189
189 189 189 189 189 189 189 189 189 189 185 186 189 190 190 188 187
188 190 189 188 187 187 191 190 190 190 188 186 185 184 182 178 177
174 170 165 163 167 172 177 179 179 180 186 191 194 198 203 206 201
207 208 208 205 200 194 186 179 172 166 157 145 135 121 136 152 161
166 168 172 180 188 202 215 224 233 238 237 233 225 215 205 192 177
167 160 153 141 126 113  95 113 135 140 142 145 152 165 179 197 215
233 243 248 243 236 226 212 194 177 159 146 136 130 121 104  97  86

           (Lines removed for convenience of display only)

    7   10  10  10  10   9   9   8   6   4   3   3   3   3   2   2   2
    2    2   2   2   2   2   2   2   2   3   6   8   8   8   8   8   7
    7    5   3   3   2   2   2   2   2   2   2   2   1   1   1   1   1
    1    2   2   3   6   6   7   7   7   6   6   4   3   2   1   1   1
    1    1   1   1   1   1   0   0   0   1   1   1   1   2   2   2   3
    3    3   3   3   2   2   1   1   1   0   0   0   0   0   0   0   0
    0    0   0   0   0   0   1   1   1   1   1   1   1   1   1   1   0
    0    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
    0    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
    0    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
    0    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
    0    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
    0    0   0
```

Figure 14.1

15.   UPDATE HISTORY

The following is a brief list of all the major changes that have taken place in the SAASTAN - User Interface program since inception.

Version 3.88 (Released October 2002)

- Released with the Perfect Lite software package (Version 4.86)
- Performance improved when running on Windows NT/2000/XP systems
- Output layout slightly modified
- For Mode 1, 2 & 3 calculations software now warns if the I-table nominated from a file is in the IES format
- Allows output to be printed to a text file (PLE.TXT) rather than a specific printer
- *From late 2002 this program will be superseded by the Windows application called Vehicular Traffic Lighting software (PLEVTL).*

Version 3.86 (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
- Changes to the Help file in particular to the input fields in Mode 3

Version 3.85 (Released June 1998)

- Released with Perfect Lite Version 4.82
- Several internal changes relating to Year 2000 compliance.
- The maximum mounting height able to be input into the program has been increased to 60 metres. This allows for the use of high mast installations on very wide freeways etc.. (To use wider than the 25 metre maximum road width set in SAASTAN a specially modified version of SAASTAN is required.)
- Allows specification of a full pathname (eg. Drive letter, subdirectory, file name and extension) of photometric data files to be imported into the Library.
- Selection of files for import uses the standard DOS file dialogue box for easier operation.
- Detects the problem of SAASTAN not completing the creation of the SAAOUT file containing the calculation results on newer/faster PC's. The program reports the situation and advises of corrective action.

- UIS97.EXE is now stand alone, that is, it can be executed directly from DOS, if desired, rather than going through the normal Perfect Lite menu system. This is necessary sometimes if you get an error message, using the menu system, indicating you have 'insufficient conventional memory' to run the program.

Version 3.84 (Released April 1997)

- Released with Perfect Lite Version 4.81
- Mode 3 corrected - results only shown for nominated Observer positions NOT all 5.
- Some limiting values on input fields increased for more practical extremes
- Spacing range timing display corrected
- Illuminance design noted for radius of curvature less than 100 metres
- LTP's changed for revised standard (AS/NZS 1158.1.1-1997)
- Rounding & compliance checking done properly to 2 significant places
- 'Exit to DOS command l......' option removed
- Summary display for Mode 2 changed to be on input screen
- 'View last SAASTAN run results' replaced by 'View last Spacing run results'
- UWLR102.EXE now referenced for Upward Waste Light Ratio
- Luminaire spacing for Mode 3 NO longer twice for staggered arragnement
- Cursor now returns to last field used after calculating for Mode 1 & 2
- Help file changed to UIS97.HLP and updated
- Initialisation file changed to UIS97.INI
- Archive/Restore option removed as not considered any real use

Version 3.83

- 'Add luminaires....' option replaced by 'Insert luminaires....'
- 'Archive/Restore' option added using PKZip style archiving routines
- MAIN MENU now referred to as USER INTERFACE MENU
- File 'SLCONFIG.DAT' now called "UIS.INI" and consists of only 8 lines (ie. Manufacturer names)
- 'Modify manufacturer names' menu option added
- 'SAAOUT' corrected so 'overhang 2' not shown if ARR=2
- Only 1 luminaire per photometric data file allowed
- Archives/Restores Batch run files as well (erases them when done)
- Picks up where GLARE CANNOT BE CALCULATED and displays appropriate message
- Disables MOUSE if file 'MOUSE.NO' found

Version 3.82

- Colour scheme passed from PLE.EXE
- Photometric I-table data print out added

Version 3.81

- Spacing runs corrected to use changed input data
- Summary of layout added to Spacing listing
- Last spacing range used are displayed when 'F5' pressed
- NZR2 (Dry) & NZN4 (Dry) road surfaces added to 'RTABLES.DAT'
- Allows I-table file name to be used in lieu of luminaire reference no.
- <F3> for luminaire list added to 'Delete/Change' screens
- <F4> for Directory list of files at various points
- 'Curve spacing adjustment' option added to main menu
- Max. median width & overhang increased to 20m

Version 3.80

- Almost totally revamped
- Uses "ESCMODE" screens for data input
- Converted to use Basic Compiler 7.1 and Probas Library fully
- Luminaire description increased to 40 characters
- Network printer Support (/LPT? option)
- Spacing range added to Mode 2
- <F3> option added to Mode 1, 2 & 3 input screens
- File 'OVERHANG' changed to 'OVER-HNG'

- Maximum no. of lights in Library changed from 300 to 200

Version 3.72

- Maximum upcast angle increased to 60 degrees
- Maximum carriageway width increased to 60 metres

Version 3.71

- Display of overhang included in summary lists

Version 3.70

- Uses Basic Compiler 7.0 and PLER-ENR library

Version 3.51

- Maximum carriageway width increased to 40m
- Maximum overhang increased to 20m

Version 3.5

- uses PROBAS routines etc.
- New menu systems using mouse

Version 3.33

- includes interface with 'CARL'

Version 3.32

- Mode 3 file format corrected

Version 3.30

- Improved menu selection

Version 3.25

- "SAAOUT" file cleared before "SAASTAN" is executed

Version 3.22

- Delayed batch execution added

Version 3.20

- Batch mode added

Version 1.0

- Original issue (1987)

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