

# Appendix

## Tips for Advanced Users

### Generating Templates: Lighting-up Groups of Wells Simultaneously

1. Go to [www.embitec.com](http://www.embitec.com)
2. Downloads→Instructions→LightOne™ Pro: Generating Templates

### Browse Mode: Quickly Toggle to Your Template

1. Go to [www.embitec.com](http://www.embitec.com)
2. Downloads→Instructions→LightOne™ Pro: Browse Mode Tips

## Useful Links

### A. Online Selector

[www.embitec.com/selector](http://www.embitec.com/selector)

### B. Video Tutorials

#### LightOne™ Pro Introduction:

<http://www.youtube.com/watch?v=LytBYwaNa-4>

#### LightOne™ Pro File Generator Tutorial

<http://www.youtube.com/watch?v=Z98O16IASvU>

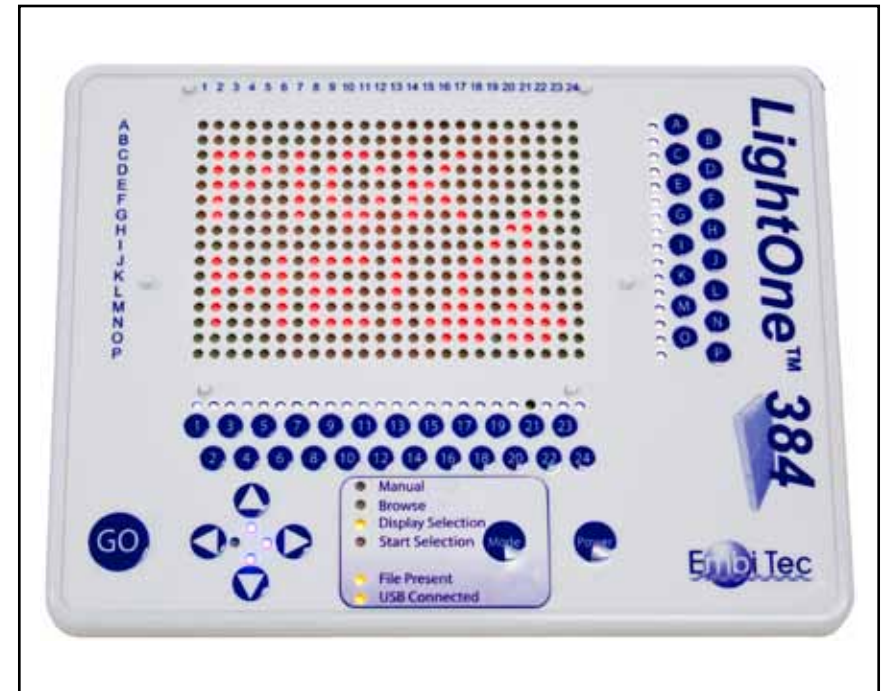
#### LightOne™ Pro Converter Tutorial

<http://www.youtube.com/watch?v=8gXU2h9eQ44>

Visit our YouTube channel “EmbiTecTeam” for more videos.

# LightOne™ Pro

Catalog No. LI-2100



Instructions Manual

## SAFETY

Always wear protective gloves and safety glasses in the laboratory. The LightOne Pro is intended for laboratory research use only. Power is supplied to the LightOne Pro by the AC adaptor and is designed for use with the LightOne Pro only. Do not attempt to use any other AC adaptor with the LightOne Pro. The LightOne Pro should not be modified or altered in any way. Embi Tec is not responsible for any injury or damage caused by improper use of this apparatus or by modifications to the system not performed by Embi Tec.

## MAINTENANCE & CLEANING

To clean, simply wipe down the smooth surface with a damp towel. The LightOne Pro is water resistant, but not waterproof.

## WARRANTY

The LightOne Pro is warranted to be free of defects in materials and workmanship for a period of one year from the date of purchase. If defects are found during this warranty period, Embi Tec will replace the defective parts at no charge, provided product is returned within the warranty period. This warranty specifically excludes:

Defects caused by improper operation. Damage caused by improper handling or accidental misuse. Damage incurred during shipping.

This warranty is VOID if moisture is discovered inside the unit or if the unit has been opened.

## LightOne Pro Warranty Information

Date of Delivery: \_\_\_\_\_

Invoice Number: \_\_\_\_\_

Purchase Order: \_\_\_\_\_

## B. 96-well and 384 well Converter

- The following instructions show how to convert a .csv file to an .emb file.
  - Set up an Excel spreadsheet with Column A being the plate names and Column B being the well coordinates. Save the file as a .csv file. See Figure 1.
  - The order of the wells listed down the column will correspond with the order the wells light up.
  - If multiple plate names appear in one .csv, the file converter will generate separate files for each plate.
  - Connect the flash drive included with the unit to the computer. Open the 96-well or 384-well converter as appropriate. The following instructions are the same for both.
  - Click, "File→Open→(your file name)" to open your .csv file. See Figure 2.
  - The data for the template will be displayed in the converter. See Figure 3.
  - Select the destination folder for the template file by clicking "Target Path."
- Note:** We recommend setting the destination folder to the Embi Tec flash drive root directory.

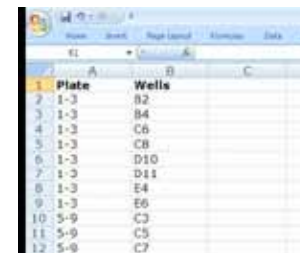


Figure 1



Figure 2

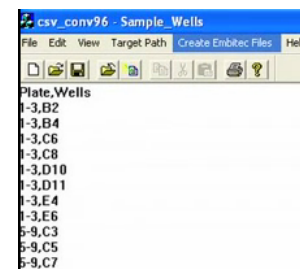


Figure 3

- Click "Create Embitec Files." The files will be generated as inXX.emb, with XX being a two-digit number. The converter generates files in sequential order, always starting with in01.emb. If the destination folder already has a file with the same name, that file will be replaced. The converter will also generate an error list and a plates list file, which documents the connection between the files generated and the plate names from the .csv file.
- If the destination folder was not set to the Embi Tec flash drive prior to creating files, the .emb files should be copied to the root directory of the flash drive.
- Connect the flash drive to the LightOne Pro and enter "Browse" Mode to preview the template.

6. Enter plate names or comments about the file in the “Comment” Box and they will be embedded in the generated file.



7. If the wells are to light up in the order they were selected, click the “Maintain order of well selection” checkbox near the bottom.

8. Press “Generate Configuration File” at the bottom to generate the template.




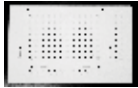



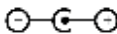

9. A dialog box will appear showing the selected wells and their order of progression. If the “Clear plate after export” checkbox is checked, the generator will be cleared after saving the file.

10. Click “Dismiss” to return to the generator.

11. Click “Generate File” to confirm the file. The file will be saved to your computer’s download folder and will be named “inXX.emb”, with XX representing the “File #” from the drop down menu.

12. Copy the newly generated template file to the flash drive. The template file must be in the root directory of the flash drive and have an .emb extension to be read by the unit. Connect the flash drive to the LightOne and see the **“USB Mode”** section on page 6.

## Components and Specifications





<p><b>LightOne Unit</b></p> 	<p><b>Dimensions</b> • 16.3 (L) x 21.4 (W) x 1.0 (H) cm</p> <p><b>Weight</b> • 0.4 kg</p> <p><b>Material</b> • Molded white polycarbonate enclosure • One piece water-resistant membrane overlay</p> <p><b>Alignment</b> • 6 molded pins to hold 384 well plates in place • 2 side pins are flexible</p> <p><b>Plate Compatibility</b> • All standard 384-well transparent or translucent plates</p> <p><b>LEDs</b> • 384 Red array LEDs (635 nm at 20 mA) • 40 White button indicator LEDs • 6 Amber MODE indicator LEDs • 4 Blue directional indicator LEDs</p> <p><b>Light Source Life</b> • 50,000 hours</p> <p><b>Intensity</b> • 3 Settings: High, Medium, Low</p> <p><b>Manual Program</b> • User illuminates single well, entire/partial column, entire/partial row or area by pressing buttons corresponding to its coordinates</p> <p><b>Connections</b> • 1 USB port for flash drive • Plugs into Junction Box</p> <p><b>USB Program</b> • Load and run .emb files from flash drive</p>
<p><b>LightOne 96-well Adapter Mat</b></p> 	<p><b>Dimensions</b> • 18.1 (L) x 11.8 (W) x 0.2 (H) cm</p> <p><b>Weight</b> • 0.053 kg</p> <p><b>Material</b> • Molded white silicone</p> <p><b>Alignment</b> • Mat alignment • 6 holes to align mat to pins on unit • 96-well plate alignment • 5 molded oblong holders for fully skirted plates • 4 molded round holders for non-skirted and semi-skirted plates</p> <p><b>Plate Compatibility</b> • All standard 96-well transparent or translucent plates</p>
<p><b>USB Flash Drive</b></p> 	<p><b>Storage Capacity</b> • 512 Mb</p> <p><b>CSV File Converters</b> • 96-well Converter, 384-well Converter • Converts .csv files into .emb files • preloaded templates</p>
<p><b>Power and Junction Box</b></p> 	<p><b>Dimensions</b> • 3.3 (L) x 3.9 (W) x 2.1 (H) cm</p> <p><b>Weight</b> • 0.025 kg</p> <p><b>Material</b> • Black ABS enclosure</p> <p><b>Connections</b> • Foot Switch • 5 V AC Power Supply • Links 2 LightOne Units</p>
<p><b>AC Power Supply</b></p> 	<p><b>Input</b> • 100-240, 50-60 Hz</p> <p><b>Output</b> • 5 V, 1.2 A, polarity </p> <p><b>Connections</b> • Plugs into Junction Box</p> <p><b>Compatibility</b> • 4 changeable prongs for worldwide use</p>
<p><b>Foot Switch</b></p> 	<p><b>Dimensions</b> • 10.1 (L) x 8.7 (W) x 3.1 (H) cm</p> <p><b>Weight</b> • 0.125 kg</p> <p><b>Material</b> • Blue ABS enclosure</p> <p><b>Connections</b> • Plugs into Junction Box</p>

## Modes of Use


### Manual Mode

Select a well, area, complete or partial rows and columns by pressing the coordinates with the buttons along the right edge and the bottom edge of the plate. Index lights will guide the selection. View the chart on page 3 for a summary.

For more detailed examples, refer to the appendix on back page.


**Note:** Use the     to move the position of the selection

#### To Select a Well

1. Press the coordinates of the well: letters on the right and numbers on the bottom.
2. Press  to confirm.




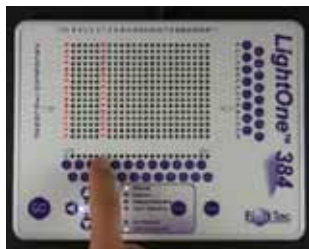
#### To Select a Single Row or Column

1. For a single row or column, press a single row letter or column number.
2. Press  to confirm.



#### To Select Multiple Rows or Columns

1. Press either two letters for rows or two numbers for columns. This will select the two rows or columns and everything in between.
2. Press  to confirm.



## Generating Template Files

### Online Selector

1. Open a Chrome or Mozilla browser to [www.embitec.com/selector](http://www.embitec.com/selector) or click on the link on Embi Tec's homepage.

2. Choose either the 96-well or 384-well generator by clicking the appropriate button at the top left corner. The following instructions are the same for both.

3. On the appropriate generator, click on the gray light bulb to select the well(s) and the light bulb will turn orange. Click on the orange light bulb to deselect the well(s) and the light bulb will turn gray.

4. A group of wells can be selected by right-clicking and dragging over an area. The wells will still light up individually.

For lighting up more than one well at a time, see the appendix.

5. After the wells have been selected on the template, choose a number from 01 to 99 from the "File #" drop down menu. This will correspond with the file number on the LightOne. You cannot generate a file without selecting a file # first.




## USB Mode-Using the Flash Drive



Connect the flash drive containing the template files. The “USB Connected” LED will turn on. If a template file is present in the slot displayed, the “File Present” LED will also turn on.





### Previewing Template Files

1. After connecting the flash drive, switch to “Browse” Mode by clicking the  button until the Browse LED turns on.






2. Use the  and  arrows to navigate between files. The two digit number displayed indicates the current file.


3. Use the  arrow to preview files. Use the  arrow to view the file numbers.



### Running Template Files


1. From “Browse” Mode, toggle to the desired template file. Press the  button to switch to “Start Selection” Mode.
2. The first well in the template will light up. Proceed through the template by clicking the  button or pressing the foot pedal.
3. At the end of the template, all the wells in the template will light up to display the pattern that has been pipetted.
4. To select another template, press  button until the “Browse” LED is turned on. Repeat the steps from Previewing Template Files.

### To Select a Partial Row or Column

1. Press a row or column.
2. Press another row or column.
3. Press the letter or the number coordinates to limit the previously pressed row or column respectively.
4. Press  to confirm.

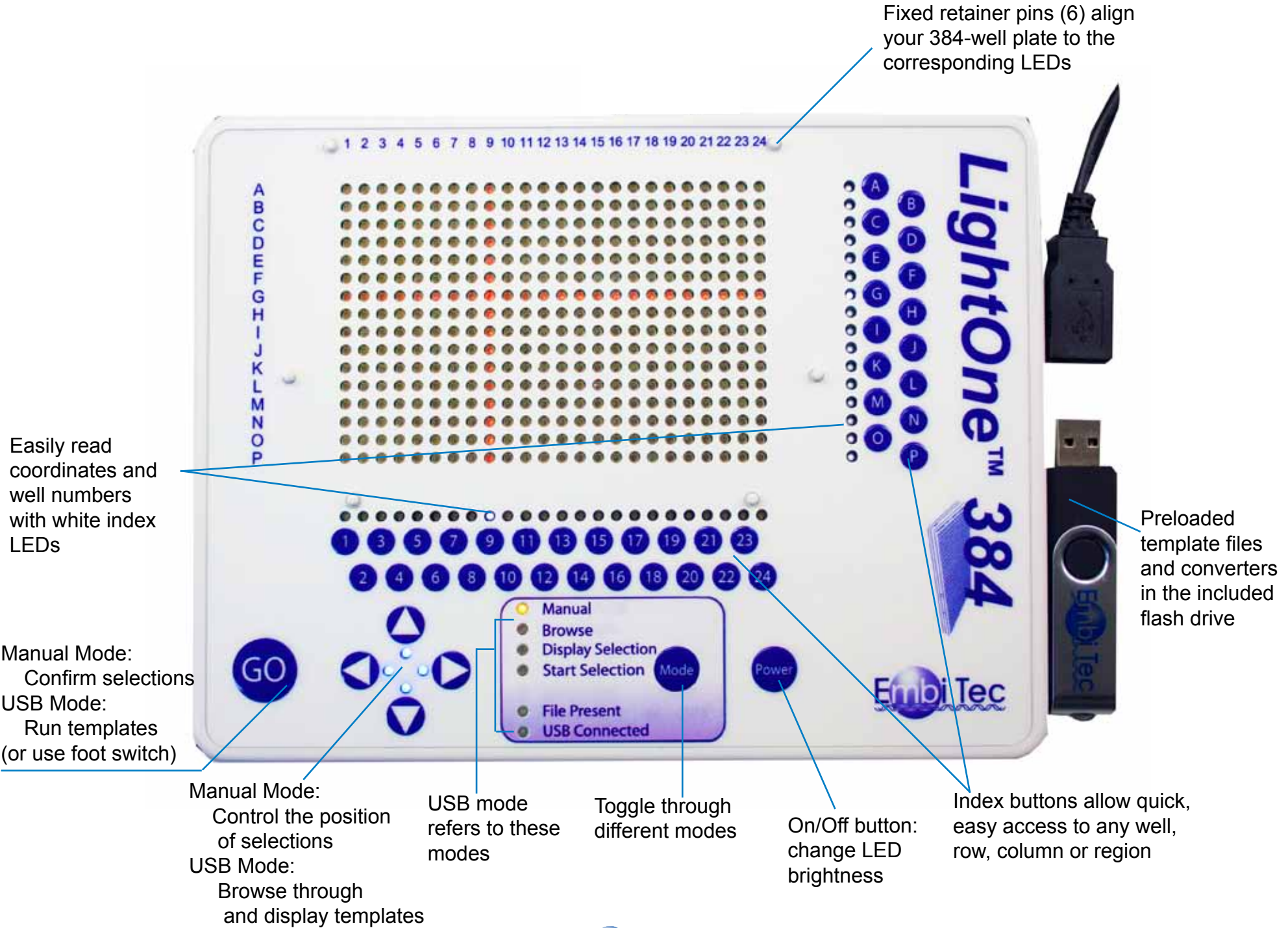


### To Select an Area

1. Press the coordinates of the four corners of the rectangular area.
2. Press  to confirm.



Selecting	First Press	Second Press	Third Press	Fourth Press	Confirm
Single Well 	Any Letter A-P	Any Number 1-24			
Complete Row 	Any Letter A-P				
Complete Column 	Any Number 1-24				
Multiple Rows 	Any Letter A-P	Any Letter A-P			
Multiple Columns 	Any Number 1-24	Any Number 1-24			
Partial Row 	Any Letter A-P	Any Number 1-24	Any Number 1-24		
Partial Column 	Any Letter A-P	Any Letter A-P	Any Number 1-24		
Area 	Any Letter A-P	Any Letter A-P	Any Number 1-24	Any Number 1-24	



Fixed retainer pins (6) align your 384-well plate to the corresponding LEDs

Easily read coordinates and well numbers with white index LEDs

Manual Mode: Confirm selections  
USB Mode: Run templates (or use foot switch)

Manual Mode: Control the position of selections  
USB Mode: Browse through and display templates

USB mode refers to these modes

Toggle through different modes

On/Off button: change LED brightness

Index buttons allow quick, easy access to any well, row, column or region

Preloaded template files and converters in the included flash drive

