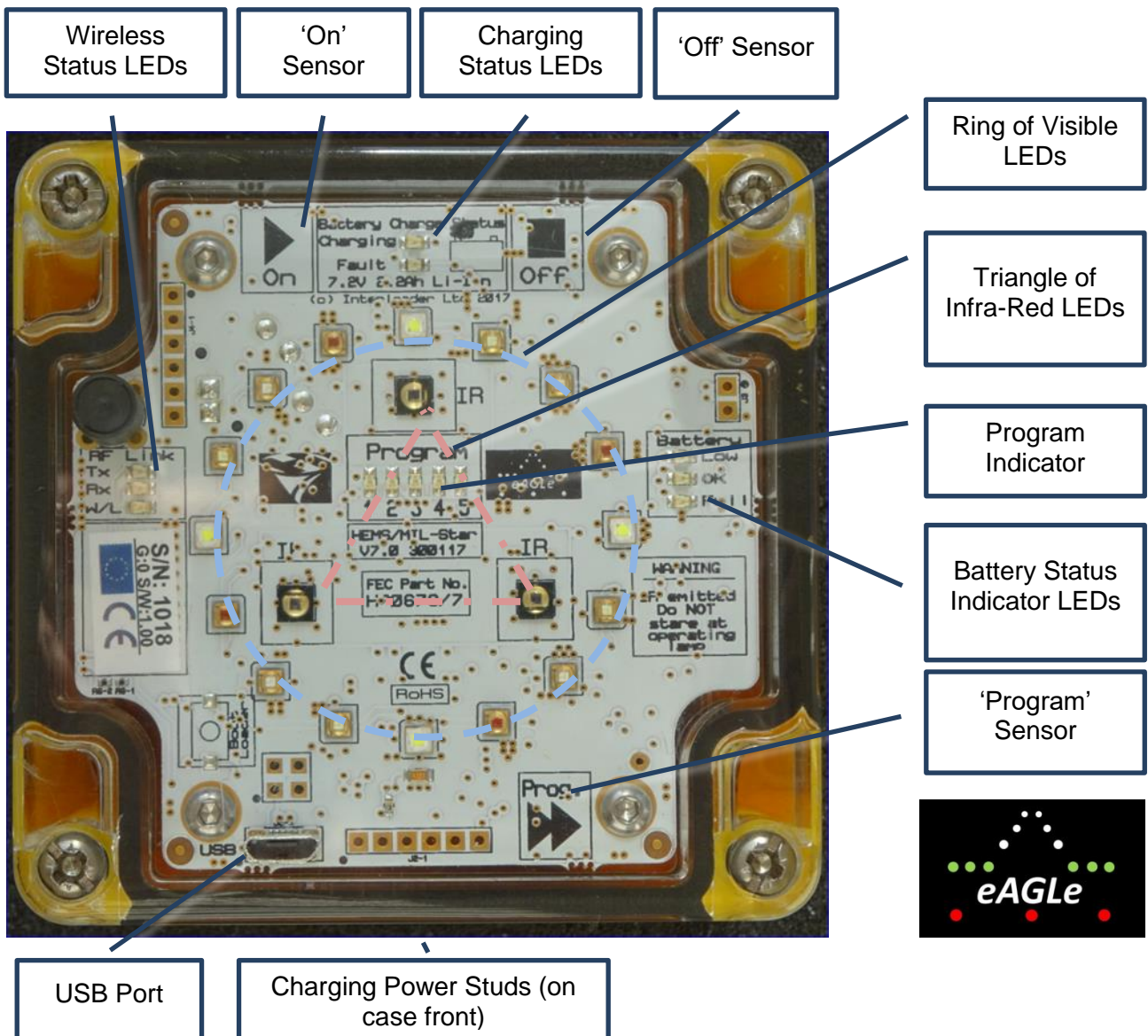


**MIL-Star® & HEMS-Star®**

MIL-Stars® & HEMS-Stars® (in this document – the lights) share a common architecture. This document refers to both except where noted.

The lights are completely self-contained, advanced portable lighting solutions, incorporating; microprocessor main controller, magnetic control switches, advanced LED driver units, visible and infra-red LEDs, Li-Ion battery, advanced battery charging control and monitoring system, charging studs, USB port for field upgrade of the software and a UHF wireless interface for programming, monitoring and controlling the light from either: a Remote Lighting Controller, a PC with the provided wireless 'dongle', a Mobile Lighting Controller (MLC) or an optional Key Fob Controller (KFC).



To get the most from your Light please read the manuals thoroughly 

*Note: For clarity, most images are of HEMS-Star®*



## 1. Basic Operation

Basic On/Off/Program selection of the lights is achieved by activating magnetic sensors inside the unit using a small magnet (supplied).

### Turn Lights On

To turn a light on, momentarily bring the Magnetic Key Controller (MKC) in line with the 'On' sensor on the unit's top panel (picture top right).

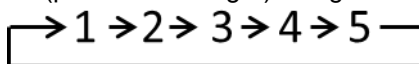
### Turn Lights Off

To turn a light off, momentarily bring the Magnetic Key Controller (MKC) in line with the 'Off' sensor on the unit's top panel (picture middle right).

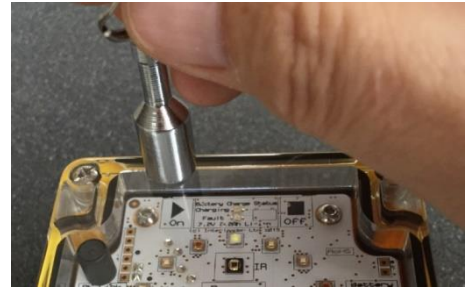
If the unit is off, bringing the MKC in line with the 'Off' sensor, displays the current Program and battery status (useful for a quick check without having to turn the unit on)

### Advance Light Program

To advance the light to the next Program, momentarily bring the Magnetic Key Controller (MKC) in line with the 'Program' sensor on the unit's top panel (picture lower right). Program advance is:



The Program can also be advanced with the unit off in which case the current Program is briefly shown and then the Program advances by one.



### Reset the Light (Software V2.4 onwards)

With the light off or on, holding the Magnetic Key Controller (MKC) on the Program sensor for 5 seconds will initiate a system reset. After 5 seconds all Program lights will come on, then progressively go off and the unit will reset and re-start. All configuration settings are retained during a reset. If this fails to clear the issue, contact FEC for further instructions.

## 2. Default Program Settings

The default program settings are:

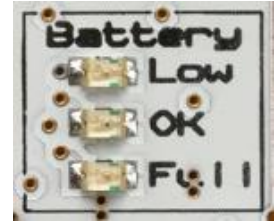
Program	1	2	3	4	5
Colour	Green	Green	Green	Red	White
Visible Level	50%	50%	50%	75%	100%
Single/Dual	Single	Single	Dual	Single	Single
IR Level	30%	30%	50%	30%	30%
Mode	Steady	Steady	Steady	Flash	Flash
Flash Pattern	1:3	ID Single	ID Dual	ID Dual	Morse 'H'
Normal/Sunset Switching	Normal	Sunset	Normal	Normal	Normal
Stealth	Normal	Normal	Normal	Normal	Normal
Comment	Shipping setting		Warning IR Emitted		

Both visible and IR LED levels can be set to 1%, 3, 10%, 20%, 30%, 50%, 75% & 100% of the maximum output.

Note that greyed-out figures above mean that these are set in the program memory but ignored because of the other settings. e.g. in program 1 Dual Mode is set at 30% but is ignored because program 1 is set to Single Mode.

### 3. Battery Capacity ‘Traffic Light’ LED indicators

LED Status	Battery Voltage	Meaning
Red flash every 10s	<6.00V	Battery exhausted – Switch off & Recharge
Flashing Red every 1s	6.00V - 6.25V	Battery nearing exhaustion. Switch off & Recharge
Solid Red	6.25V – 6.80V	Battery low (<20% remaining).
Solid Orange	6.80V – 7.50V	Battery OK (between 20% and 80% capacity)
Solid Green	>7.50V	Battery Full (>80% capacity)



### 4. Charging

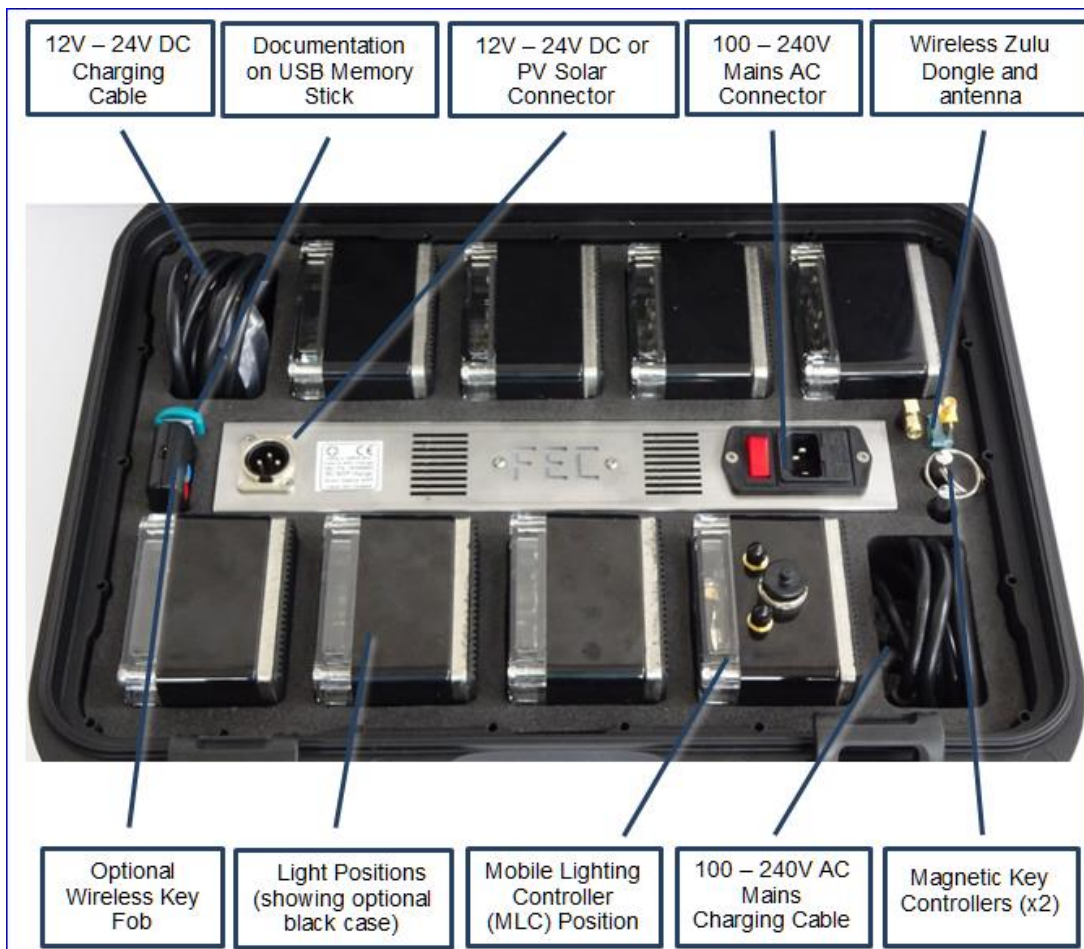
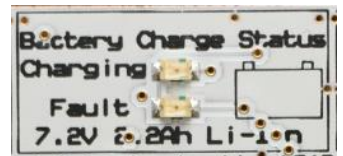
**Do NOT Charge from mains with the Case Lid Shut**

The lights are charged in their carrying case using the integrated mains Power Supply Unit or from a nominal 12V or 24V DC supply (e.g. car or truck) or directly from a 12V (nominal) PV Solar Panel.

Battery Charge Status LEDs (visible when in the case) indicate:

**Charging:** Green LED lit while charging – Goes out when fully charged

**Fault:** Red LED lit if there is a battery fault – stop charging and investigate cause (see manual)



A refresh cycle should be performed once every 6 month (more frequently in very hot conditions – see manual) to maintain full charge and best battery condition and life.

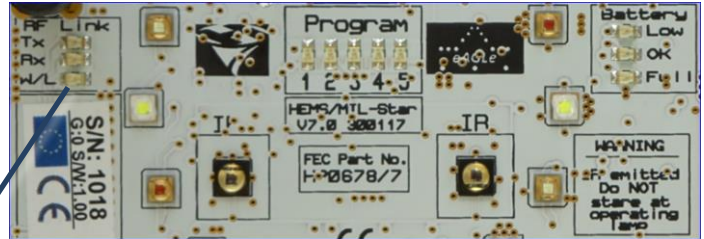


## 5. Wireless Controller

All lights are shipped in manual mode and will operate at the colour and intensity selected by default Program 1 (Green, 60% of max) when first turned on.

All lights will come on in manual mode and the blue Wireless LED will be off.

Wireless LED  
(Blue)



The wireless (blue LED) will light when the unit is in 'Standby' wireless mode.

### Wireless Groups

To enable control of a specific group of lights in a situation where multiple groups are deployed (for example, multiple adjacent pads), all lights belong to a 'Group'.

Groups of lights will then respond to Wireless PC Controller or Remote Lighting Controllers (RLC) set to that group number. Lights are shipped set at Group 0 (as is the RLC default settings).

If multiple groups of lights are to be controlled then each set needs to have their Group set using the wireless PC Controller software.

## 6. Support Documentation

Documentation, including this manual, is contained on the USB memory stick in the case (colour of USB stick will vary).

Also on the USB memory stick are short video clips that demonstrate various aspects of setting up and using the lights and charger. Updates may also be posted on the FEC website.



### Material on the USB Stick:

There are a number of folders and files on the USB Memory Stick containing (typically):

Battery Data	Manufacturers declaration about the battery
FTDI-Drivers	Drivers for wireless dongle
HEMS-Star Software	Software running the HEMS/MIL- Star lights
KFC Software	Software for the optional Key Fob Controller
Labels	Battery shipping labels
Manuals	HEMS-Star/MIL-Star summary (this document) HEMS-Star/MIL-Star manual FEC Systems Management Software manual Key Fob Controller manual
SMS V4.2	Systems Management Software
Videos	Short videos showing basic operations
XLC Software	HLC Software (for HEMS-Stations)
FTDI-Drivers.zip	Drivers for wireless dongle (zip format)

Name
Battery Data
FTDI-Drivers
HEMS-Star Software
KFC Software
Labels
Manuals
SMS V4.2 Build 4231
Videos
XLC Software
FTDI-Drivers.zip