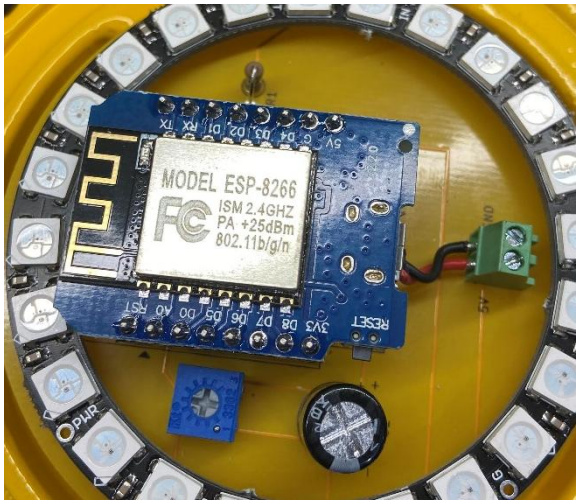
METAR Lamp Rev 4

Thank you for purchasing the METAR Lamp! This device is designed to pull METAR data from aviationweather.gov based on your selected airport and display it using the four standard METAR colors for flight conditions.

What to Expect

This light is powered through the USB Plug attached at the base. This is designed for power only and can be plugged into a USB charger and plugged into a standard electrical socket. USB charge is not supplied.

When the lamp is powered up, the lamp will display yellow to indicate that it is working. It will display purple when it is connected to the Wi-Fi and is retrieving data, and then will display the METAR color. It will update every 5 mins and update the lamp color as needed.



The brightness can be adjusted in the program for the lamp, as well as adjusting the potentiometer under the lamp glass. By removing the glass, the lamp and Wi-Fi module are exposed and the potentiometer can be adjusted to change the brightness. This is the blue square located in the bottom left of the picture. Counter-clockwise to dim the lamp, clockwise to brighten. The lamp will need to be reset to check the brightness by pushing the reset button on the Wi-Fi module located in the bottom right of the module.

Programming the Lamp

If this is a new lamp, the program is loaded onto the lamp and will not require programming. If you are needing to upload the permanent program or need to update an existing lamp, the following instructions will walk you through this process.

Getting the Files

The files for the lamp program and the uploader are found at the Google Drive link below.

https://drive.google.com/file/d/1vIwr5g_CG4lmS0ovazMbqUTs5z1Pm09x/view?usp=sharing

The files located in the Zip drive contain .Bin files, which get blocked by Gmail. Pulling them from Google Drive will be the easiest method.

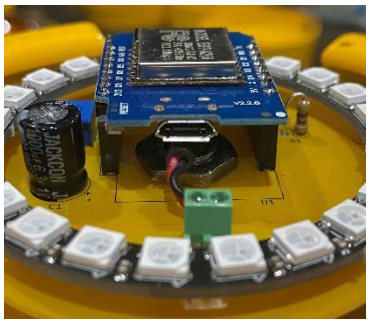
Extract the files to your computer and open the file. Run the “Setup Driver” which will add the drivers needed to communicate to the WiFi module.

METAR_Lamp_Wifi_Permanent.bin	11/12/2023 10:31 PM	BIN File	452 KB
METAR_Lamp_Wifi_Reset.bin	11/12/2023 10:29 PM	BIN File	452 KB
ESP8266Flasher - This is Step 2	11/12/2023 10:12 PM	Application	6,934 KB
plluvcp	11/12/2023 10:12 PM	Security Catalog	11 KB
plluvcp	11/12/2023 10:12 PM	Setup Information	4 KB
Setup Drive x32	11/12/2023 10:12 PM	Application	541 KB
Setup Driver x64 - Try this one first	11/12/2023 10:12 PM	Application	664 KB
slabvcp	11/12/2023 10:12 PM	Security Catalog	11 KB
slabvcp	11/12/2023 10:12 PM	Setup Information	4 KB
dpinst	11/12/2023 10:12 PM	Microsoft Edge HT...	10 KB
Config	11/13/2023 12:43 PM	File folder	
x64	11/12/2023 10:12 PM	File folder	
x86	11/12/2023 10:12 PM	File folder	

After the drivers have been installed, you can begin the process of loading the program.

Loading the Program

PLEASE NOTE: It is important to make sure that the lamp is not plugged into a source of power through its main USB power cable. This can cause damage to your computer. The programming will need to be done with the main cable unplugged.

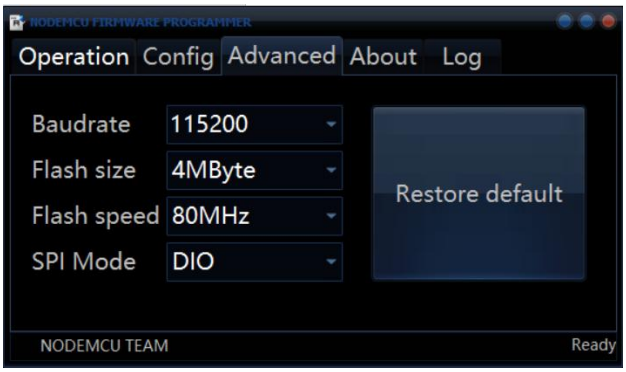


A Micro USB cable is used to program and is plugged into the front of the Wi-Fi module. Plug the USB into the module and into your computer. You can do this with the module plugged into the lamp. In some cases, the WiFi module will need to be pulled up slightly, depending on your USB Cable. This is ok.

A common issue when programming is that it is common to find USB cables that are not data cables. If you are struggling to get the lamp to be recognized by your computer, a common fix is to find a quality USB cable designed for data transfer.

From a Windows computer, Open the ESP8266Flasher program and set it up based on the following.

From the Advanced tab



Baudrate : 115200

Flash Size: 4 Mbyte

Flash Speed 80MHz

SPI Mode: DIO

From the Config tab

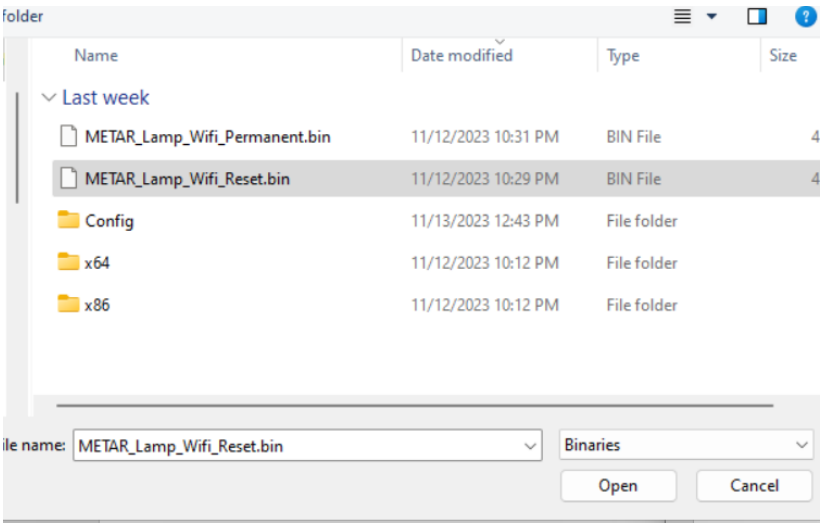
Select the gear on right of the first line and then navigate to your file of choice. This file should end it .bin.

The two files that are supplied are defined below. Both files are identical in operation, except one will permanently save your credentials.

METAR_Lamp_Wifi_Reset.bin : This is the file that will come preloaded and is recommended when updating the software. When installed, it will ask you to add your WiFi credentials and Airport Identifier when power is removed. This will allow you to change your information if you move your lamp often or change your WiFi password often.

METAR_Lamp_Wifi_Permanent.bin : This file will remember your SSID, Password and Airport Identifier and save it permanently. When the lamp is powered off, it will recall this information without requiring you to re-enter it. Installation of this program is noted at the end of this chapter.

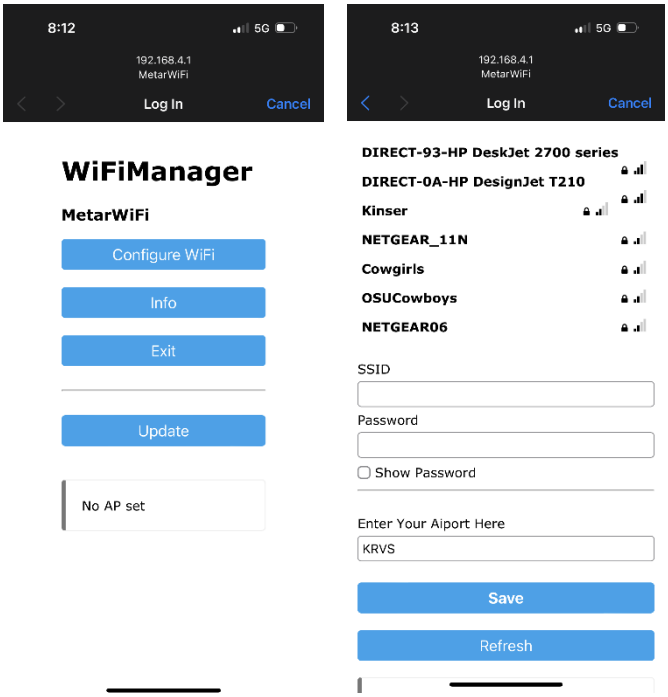
From the Operation tab



Click the Flash Button. In some cases, you may need to change the COM Port to a different port. If you are struggling to identify the correct port, unplugging and re-plugging the lamp to identify which com port disappears and reappears. Flashing the program can take a few minuets. When it is done, a green check mark will appear in the lower left corner of the program window.

If the progress bar is not filling in and the two windows still state “Waiting MAC”, this is an indication that the incorrect COM port is selected, or that you are trying to use the power USB to program the lamp.

Setting up the Lamp



The lamp connects to your Wi-Fi using a WIFI Manager. When the lamp is powered up, it will display yellow. This indicates that it is waiting for the SSID and Password (if applicable) to be added to the module. Using a mobile device, go to your Wi-Fi settings and select “MetarWiFi” from your Wi-Fi options.

This will open WIFI Manager in a web page. Select “Configure Wi-Fi” which will take you to a log in screen. Select your SSID from the list, or manually enter it into the Textbox. Add your Password to its associated Textbox. Enter your ICAO airport identifier to the “Enter Your Airport Here”. This should be all caps and formatted as the ICAO identifier. If you are unsure if your airport is reporting weather or want to make sure the format is correct, check in at the link below. The website will correct your identifier if it is not formatted correctly, so make sure to check it when confirming.

https://aviationweather.gov/data/metar/

Push save to send this information to the Wi-Fi Module. Once programmed, the lamp should turn purple and then change to the METAR color. The Wi-Fi gateway will disappear and not be accessible until the lamp is reset. If the lamp does not change color, retry the information again.

Permanent programming

If the process of setting up the lamp every time is troublesome, then the permanent program may be worth setting up. After you are comfortable with the process of setting up the lamp with the Reset program, follow the instructions for updating the software. Plug the lamp into your computer and set up the Wi-Fi SSID, password and Airport and verify they are working. While still plugged in, Use the bootloader to load the permanent program. This will remember the parameters and will recall them when powered up. The program can also be loaded traditionally and Wi-Fi credentials. If you want to change the parameters at a later date, you will need to load the reset program and cycle the power to erase the stored data.

Troubleshooting

Only the yellow lights show: This indicates that the Wi-Fi name or Password are incorrect. Make sure that they are formatted correctly and that and no extra spaces are added before or after the name or the password

The light turns from yellow to purple and stays purple: The airport may not be formatted correctly, or the airport is not reporting weather at this time. It is also possible that your purple is actually pink (the coloring is very close) and it may be reporting LIRF.

Light turns from purple and then goes black: this is an indication that your airport is not formatted correctly, or is not reporting METARs at this time. If you are setting up a new lamp, check https://aviationweather.gov/data/metar/ to make sure you are formatting the data correctly.

Lamp is working, but is not showing color: If the lamp was working, but is not showing color, it is possible that the airport is not reporting weather. Check the NOTAMs to confirm, or check https://aviationweather.gov/data/metar/ to see if there is any data available.