

iSpindel Hydrometer

Danny Robson

Making Beer



Process

- Malt, hops, sugar, yeast, water in barrel
- Wait until density stabilises
- Bottle

Hydrometer



But... I'm lazy...

- Sample
- Measure
- Sanitise
- Repeat...

Tilt



Tilt!



V3 Tilt Bluetooth Hydrometer & Thermometer Free Spare Battery Color

\$183.28 + tax (USD 135.00 + tax) [eBay.com.au](https://www.eBay.com.au)

V3 Tilt Bluetooth Hydrometer & Thermometer Free Spare Battery Color

iSpindel



Construction

- Wemos D1 mini
- GY-521 Gyro & Acceleration Sensor
- DS18B20 Temperature Sensor
- Lipo charger TP4056
- 18650 Lilo cell

Firmware

<https://github.com/universam1/iSpindel>

 isaul32	Fix url and uri mixing (#415)	✓ 2054d44 4 days ago	⌚ 316 commits
 .github	adding issue template		3 months ago
 docs	Polynomial Generation tools (#396)		2 months ago
 drawer	mwx drawer		3 years ago
 images	refactor		4 years ago
 javascripts	Create master branch via GitHub		4 years ago
 lib	correcting typos		3 years ago
 pics	Blynk option and email notification (#264)		7 months ago
 pio	Fix url and uri mixing (#415)		4 days ago
 stylesheets	Create master branch via GitHub		4 years ago
 tools	calibration.htm outputs polynomials that can be copied directly. (#412)		4 days ago
 .gitignore	updating to new PIO output path		13 months ago
 .travis.yml	solving collisions with latest SDK		10 months ago
 CNAME	Update CNAME		3 years ago

	CHANGE	Update CHANGE	3 years ago
	Gemfile	table news	3 years ago
	LICENSE	reorganizing structure	3 years ago
	README.md	new Offset Calibration method and Filesystem config improvements	10 months ago
	_config.yml	table news	3 years ago
	bootstrap.cmd	reorganizing structure	3 years ago
	jekyll.sh	table news	3 years ago
	platformio.ini	Blynk option and email notification (#264)	7 months ago

Configuration

Configuration



SSID

Password

iSpindel Name
 iSpindel000

Update Intervall (s)
 900

Battery conversion factor
 200.00

Service Type

Ubidots Token
 1234

Gravity conversion
ex. "0.00438*(tilt)*(tilt) + 0.13647*(tilt) - 6.96"
Polynomial
 -0.0322987*tilt^2+2.643882645*tilt-38.64180015

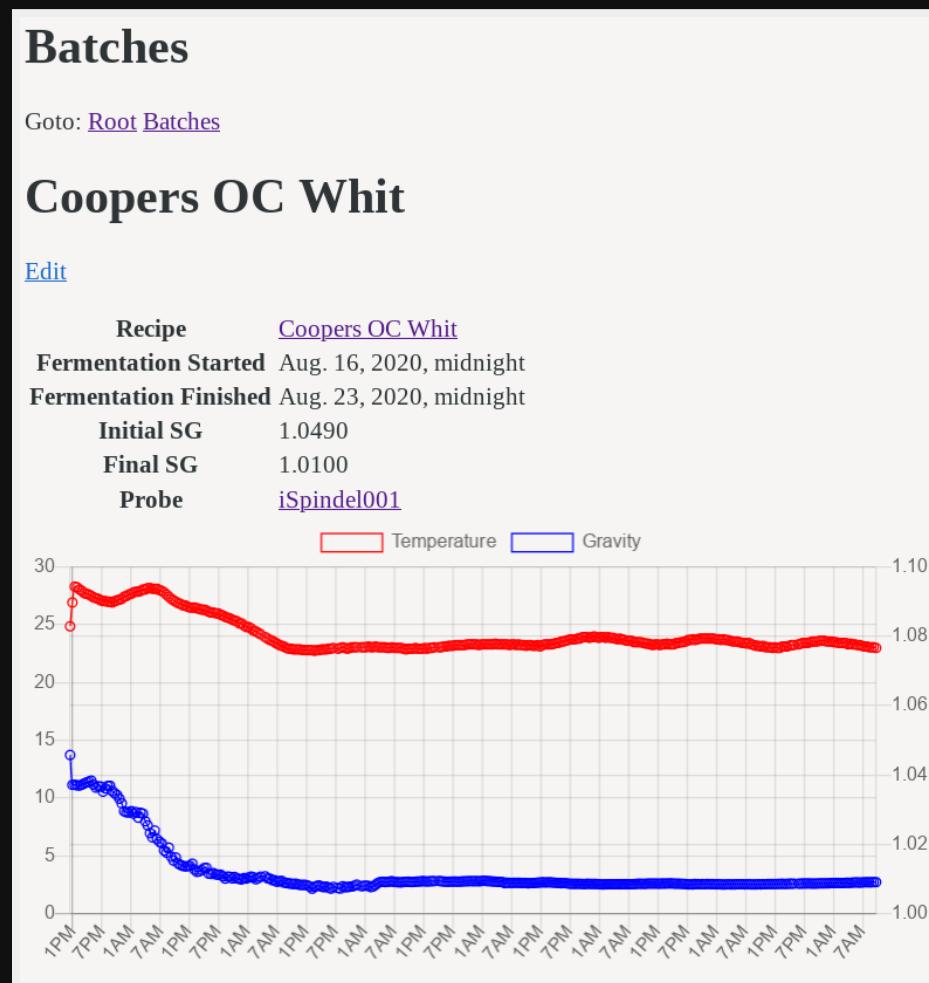
save

POST Data

```
{  
    "name": "iSpindel000",  
    "ID": 0000000,  
    "angle": 52.51873,  
    "temperature": 24.875,  
    "temp_units": "C",  
    "battery": 4.098019,  
    "gravity": 1.048152,  
    "interval": 900,  
    "RSSI": -72  
}
```

UI

<http://beer.nerdcrust.net:8004/>



TODO

- Better interface
- Better analysis

Questions

<https://github.com/universam1/iSpindel>