

ride the lightning

- Gravity **16.1 BLG**
- ABV **6.8 %**
- IBU **43**
- SRM **4.8**
- Style **American IPA**

Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **16.5 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12.3 liter(s)**
- Total mash volume **16.4 liter(s)**

Steps

- Temp **63 C**, Time **45 min**
- Temp **72 C**, Time **20 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **12.3 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **45 min** at **63C**
- Keep mash **20 min** at **72C**
- Keep mash **10 min** at **76C**
- Sparge using **8.3 liter(s)** of **76C** water or to achieve **16.5 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	fawsett - Maris Otter	2.3 kg (56.1%)	81 %	6
Grain	Fawcett-Pszeniczny	1 kg (24.4%)	85 %	4
Grain	Płatki owsiane	0.4 kg (9.8%)	60 %	3
Grain	Płatki orkiszowe	0.4 kg (9.8%)	60 %	4

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Simcoe	5 g	60 min	13.2 %
Whirlpool	El Dorado	10 g	30 min	11.6 %
Whirlpool	Chinook	10 g	30 min	13 %
Whirlpool	Amarillo	15 g	30 min	9.5 %
Whirlpool	Simcoe	15 g	30 min	13.2 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-33	Ale	Dry	11 g	Fermentis