

1 bro ever

- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **49**
- SRM **4.6**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21.4 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **26.9 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **17.5 liter(s)**
- Total mash volume **22.5 liter(s)**

Steps

- Temp **64 C**, Time **30 min**
- Temp **72 C**, Time **40 min**
- Temp **79 C**, Time **15 min**

Mash step by step

- Heat up **17.5 liter(s)** of strike water to **70.3C**
- Add grains
- Keep mash **30 min** at **64C**
- Keep mash **40 min** at **72C**
- Keep mash **15 min** at **79C**
- Sparge using **14.4 liter(s)** of **76C** water or to achieve **26.9 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	4 kg (80%)	80 %	5
Grain	Viking Munich Malt	0.5 kg (10%)	78 %	18
Grain	Viking Wheat Malt	0.5 kg (10%)	83 %	5

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Citra	30 g	60 min	12 %
Dry Hop	Chinook	50 g	10 day(s)	13 %
Aroma (end of boil)	Citra	20 g	10 min	12 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	11.5 g	Fermentis