

- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **46**
- 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 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15 liter(s)**
- Total mash volume **20 liter(s)**

### Steps

- Temp **60 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **0 min**

### Mash step by step

- Heat up **15 liter(s)** of strike water to **66.7C**
- Add grains
- Keep mash **30 min** at **60C**
- Keep mash **30 min** at **72C**
- Keep mash **0 min** at **78C**
- Sparge using **15.3 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	MARIS OTTER	5 kg (100%)	80 %	6

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Citra	5 g	30 min	13 %
Boil	Centennial	20 g	20 min	10.5 %
Aroma (end of boil)	Cascade	7 g	20 min	6 %
Boil	citra	28 g	20 min	13 %
Boil	Centennial	7 g	0 min	10.5 %

### Yeasts

Name	Type	Form	Amount	Laboratory
us 05	Ale	Dry	11 g	---