

## full aroma hops

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- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **37**
- SRM **3.8**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **24 liter(s)**
- Trub loss **7 %**
- Size with trub loss **26.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **31.7 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.2 liter(s) / kg**
- Mash size **17.6 liter(s)**
- Total mash volume **23.1 liter(s)**

### Steps

- Temp **61 C**, Time **10 min**
- Temp **71 C**, Time **45 min**
- Temp **78 C**, Time **0 min**

### Mash step by step

- Heat up **17.6 liter(s)** of strike water to **67.4C**
- Add grains
- Keep mash **10 min** at **61C**
- Keep mash **45 min** at **71C**
- Keep mash **0 min** at **78C**
- Sparge using **19.6 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	5.5 kg (100%)	80 %	5

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	30 g	60 min	10 %
Aroma (end of boil)	Lublin (Lubelski)	50 g	15 min	4 %
Whirlpool	Lublin (Lubelski)	50 g	0 min	4 %
Dry Hop	Lublin (Lubelski)	50 g	3 day(s)	4 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Safale

### Extras

Type	Name	Amount	Use for	Time
Fining	Whirlfloc	4 g	Boil	10 min