

## Full Aroma Hops

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- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **36**
- SRM **3.3**

### Batch size

- Expected quantity of finished beer **180 liter(s)**
- Trub loss **2 %**
- Size with trub loss **183.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **5 %/h**
- Boil size **196.6 liter(s)**

### Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **122.5 liter(s)**
- Total mash volume **157.5 liter(s)**

### Steps

- Temp **40 C**, Time **0 min**
- Temp **62 C**, Time **15 min**
- Temp **72 C**, Time **45 min**

### Mash step by step

- Heat up **122.5 liter(s)** of strike water to **42.9C**
- Add grains
- Keep mash **0 min** at **40C**
- Keep mash **15 min** at **62C**
- Keep mash **45 min** at **72C**
- Sparge using **109.1 liter(s)** of **76C** water or to achieve **196.6 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	35 kg (100%)	81 %	4

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	150 g	60 min	13.5 %
Boil	Lublin (Lubelski)	300 g	15 min	4 %
Dry Hop	Lublin (Lubelski)	100 g	7 day(s)	4 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Culture	200 g	Safale