

## # Full Aroma Hops

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- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **51**
- SRM **2.9**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **24 liter(s)**
- Trub loss **4 %**
- Size with trub loss **25.9 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **30.6 liter(s)**

### Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **18.6 liter(s)**
- Total mash volume **23.9 liter(s)**

### Steps

- Temp **62 C**, Time **10 min**
- Temp **72 C**, Time **45 min**
- Temp **76 C**, Time **10 min**

### Mash step by step

- Heat up **18.6 liter(s)** of strike water to **68C**
- Add grains
- Keep mash **10 min** at **62C**
- Keep mash **45 min** at **72C**
- Keep mash **10 min** at **76C**
- Sparge using **17.3 liter(s)** of **76C** water or to achieve **30.6 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Malteurop Lager	5.3 kg (100%)	82 %	3

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	35 g	90 min	9 %
Boil	Lublin (Lubelski)	50 g	45 min	4 %
Boil	Lublin (Lubelski)	20 g	10 min	4 %
Dry Hop	Lublin (Lubelski)	20 g	4 day(s)	4 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11 g	Safale