

## Full Aroma Hops

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- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **51**
- SRM **3.2**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

### Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12 liter(s)**
- Total mash volume **16 liter(s)**

### Steps

- Temp **40 C**, Time **0 min**
- Temp **61 C**, Time **10 min**
- Temp **71 C**, Time **45 min**
- Temp **76 C**, Time **10 min**

### Mash step by step

- Heat up **12 liter(s)** of strike water to **43.3C**
- Add grains
- Keep mash **0 min** at **40C**
- Keep mash **10 min** at **61C**
- Keep mash **45 min** at **71C**
- Keep mash **10 min** at **76C**
- Sparge using **18.4 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

### Fermentables

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

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	20 g	90 min	13.5 %
Boil	Lublin (Lubelski)	35 g	45 min	4 %
Boil	Lublin (Lubelski)	15 g	10 min	4 %

### Yeasts

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