

## Full Aroma Hops

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- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **38**
- SRM **3.7**

### Batch size

- Expected quantity of finished beer **135 liter(s)**
- Trub loss **0 %**
- Size with trub loss **135 liter(s)**
- Boil time **90 min**
- Evaporation rate **5 %/h**
- Boil size **152.4 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **93 liter(s)**
- Total mash volume **124 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 **93 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 **90.4 liter(s)** of **76C** water or to achieve **152.4 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	30 kg (96.8%)	82 %	4
Grain	zakwaszajacy	1 kg (3.2%)	1 %	5

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	150 g	90 min	8.5 %
Boil	Lublin (Lubelski)	200 g	45 min	4 %
Boil	Lublin (Lubelski)	50 g	5 min	4 %
Dry Hop	Lublin (Lubelski)	100 g	10 day(s)	4 %