

## Full Aroma Hops , wersja pod warkę

- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **53**
- SRM **4.5**

### Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **29.1 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.3 liter(s) / kg**
- Mash size **17.8 liter(s)**
- Total mash volume **23.2 liter(s)**

### Steps

- Temp **40 C**, Time **1 min**
- Temp **62 C**, Time **20 min**
- Temp **72 C**, Time **45 min**
- Temp **75 C**, Time **10 min**

### Mash step by step

- Heat up **17.8 liter(s)** of strike water to **43C**
- Add grains
- Keep mash **1 min** at **40C**
- Keep mash **20 min** at **62C**
- Keep mash **45 min** at **72C**
- Keep mash **10 min** at **75C**
- Sparge using **16.7 liter(s)** of **76C** water or to achieve **29.1 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	5 kg (92.6%)	82 %	4
Grain	Karmelowy Jasny 30EBC	0.4 kg (7.4%)	75 %	30

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	31.43 g	90 min	10.5 %
Boil	Lublin (Lubelski)	31.43 g	45 min	6 %
Boil	Amarillo	6.29 g	5 min	8.3 %
Dry Hop	Amarillo	12.57 g	4 day(s)	8.3 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	26.4 g	Pierwsze pokolenie