

Wolne Żarty

- Gravity **8.8 BLG**
- ABV **3.4 %**
- IBU **61**
- SRM **6.7**
- Style **American IPA**

Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **85 min**
- Evaporation rate **10 %/h**
- Boil size **30.1 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12 liter(s)**
- Total mash volume **16 liter(s)**

Steps

- Temp **55 C**, Time **0 min**
- Temp **63 C**, Time **60 min**
- Temp **70 C**, Time **15 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **12 liter(s)** of strike water to **60.8C**
- Add grains
- Keep mash **0 min** at **55C**
- Keep mash **60 min** at **63C**
- Keep mash **15 min** at **70C**
- Keep mash **10 min** at **76C**
- Sparge using **22.1 liter(s)** of **76C** water or to achieve **30.1 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale Optima	2 kg (50%)	79 %	7.5
Grain	Pilzński Optima	1 kg (25%)	75 %	4
Grain	Karmelowy jasny Optima	0.4 kg (10%)	90 %	120
Grain	Jęczmień	0.6 kg (15%)	--- %	4

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Citra	30 g	60 min	12 %
Boil	Lublin (Lubelski)	20 g	30 min	4 %
Boil	Puławski	20 g	30 min	8.9 %
Dry Hop	Citra	20 g	11 day(s)	12 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	10 g	Fermentis