

Pulsar

- Gravity **12.9 BLG**
- ABV ---
- IBU **30**
- SRM ---
- 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 **60 min**
- Evaporation rate **10 %/h**
- Boil size **29 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **17.7 liter(s)**
- Total mash volume **23.6 liter(s)**

Steps

- Temp **66 C**, Time **36 min**
- Temp **72 C**, Time **25 min**
- Temp **78 C**, Time **5 min**

Mash step by step

- Heat up **17.7 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **36 min** at **66C**
- Keep mash **25 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **17.2 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pale Ale	4.4 kg (74.6%)	79 %	---
Grain	Strzegom Pilzneński	1 kg (16.9%)	80 %	---
Grain	Słód żytni Optima	0.5 kg (8.5%)	--- %	---

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Chinook	10 g	60 min	10 %
Boil	Mosaic	15 g	30 min	10 %
Boil	Mosaic	20 g	15 min	10 %
Boil	Mosaic	30 g	0 min	10 %

Yeasts

Name	Type	Form	Amount	Laboratory
US-05	Ale	Dry	6 g	---