

Pale ale

- Gravity **15.9 BLG**
- ABV ---
- IBU **29**
- SRM **8.8**
- Style **English IPA**

Batch size

- Expected quantity of finished beer **36 liter(s)**
- Trub loss **5 %**
- Size with trub loss **37.8 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **45.5 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **31.5 liter(s)**
- Total mash volume **42 liter(s)**

Steps

- Temp **64 C**, Time **30 min**
- Temp **52 C**, Time **15 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **15 min**

Mash step by step

- Heat up **31.5 liter(s)** of strike water to **57.3C**
- Add grains
- Keep mash **15 min** at **52C**
- Keep mash **30 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **15 min** at **76C**
- Sparge using **24.5 liter(s)** of **76C** water or to achieve **45.5 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	5 kg (47.6%)	81 %	4
Grain	Castle Pale Ale	3 kg (28.6%)	80 %	8
Grain	Monachijski	1 kg (9.5%)	80 %	16
Grain	Strzegom Wiedeński	1 kg (9.5%)	79 %	10
Grain	Karmelowy Czerwony	0.5 kg (4.8%)	75 %	59

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	30 g	60 min	10 %
Boil	Centennial	20 g	30 min	10.5 %
Aroma (end of boil)	Monroe	30 g	15 min	2.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Slant	500 ml	---