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- Gravity **11.2 BLG**
- ABV **4.5 %**
- IBU **46**
- SRM **3.3**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.5 liter(s)**
- Total mash volume **18 liter(s)**

Steps

- Temp **52 C**, Time **10 min**
- Temp **66 C**, Time **40 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **13.5 liter(s)** of strike water to **57.3C**
- Add grains
- Keep mash **10 min** at **52C**
- Keep mash **40 min** at **66C**
- Keep mash **15 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **17.4 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	3 kg (66.7%)	80 %	4
Grain	Pszeniczny	1 kg (22.2%)	85 %	4
Grain	Płatki owsiane	0.5 kg (11.1%)	85 %	3

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	30 g	60 min	10 %
Boil	Centennial	30 g	10 min	10.5 %
Dry Hop	Centennial	20 g	3 day(s)	10.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
FM52 Amerykański Sen	Ale	Liquid	15 ml	Fermentum Mobile

Extras

Type	Name	Amount	Use for	Time
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Spice	skórka pomarańczy	20 g	Boil	10 min
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