

- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **30**
- SRM **4**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **18 liter(s)**
- Trub loss **5 %**
- Size with trub loss **18.9 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **23.8 liter(s)**

Mash information

- Mash efficiency **90 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **11.4 liter(s)**
- Total mash volume **15.2 liter(s)**

Steps

- Temp **62 C**, Time **40 min**
- Temp **72 C**, Time **20 min**
- Temp **76 C**, Time **1 min**

Mash step by step

- Heat up **11.4 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **40 min** at **62C**
- Keep mash **20 min** at **72C**
- Keep mash **1 min** at **76C**
- Sparge using **16.2 liter(s)** of **76C** water or to achieve **23.8 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pilsner Malt	3.5 kg (92.1%)	81 %	5
Grain	Weyermann - Light Munich Malt	0.3 kg (7.9%)	82 %	14

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	22.5 g	60 min	7.9 %
Boil	Książęcy	25 g	10 min	7 %
Aroma (end of boil)	Książęcy	20 g	1 min	7 %