

Apa

- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **35**
- SRM **4.2**
- Style **American Pale Ale**

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 **3.5 liter(s) / kg**
- Mash size **20.5 liter(s)**
- Total mash volume **26.4 liter(s)**

Steps

- Temp **62 C**, Time **20 min**
- Temp **68 C**, Time **40 min**
- Temp **77 C**, Time **1 min**

Mash step by step

- Heat up **20.5 liter(s)** of strike water to **68C**
- Add grains
- Keep mash **20 min** at **62C**
- Keep mash **40 min** at **68C**
- Keep mash **1 min** at **77C**
- Sparge using **14.4 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	4.18 kg (71.4%)	80 %	5
Grain	Bestmaltz przenica	0.84 kg (14.3%)	--- %	5
Grain	Viking cara	0.84 kg (14.3%)	--- %	5

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	10.45 g	30 min	15.5 %
Aroma (end of boil)	Citra	10.45 g	15 min	12 %
Whirlpool	Amarillo	41.82 g	20 min	9.5 %
Whirlpool	Citra	20.91 g	15 min	12 %

Yeasts

Name	Type	Form	Amount	Laboratory
Us-05	Ale	Dry	4.18 g	---