

- Gravity **13.3 BLG**
- ABV **5.5 %**
- IBU **35**
- SRM **5.8**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **38 liter(s)**
- Trub loss **5 %**
- Size with trub loss **41.8 liter(s)**
- Boil time **60 min**
- Evaporation rate **8 %/h**
- Boil size **48.1 liter(s)**

Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3.3 liter(s) / kg**
- Mash size **29.7 liter(s)**
- Total mash volume **38.7 liter(s)**

Steps

- Temp **67 C**, Time **40 min**
- Temp **72 C**, Time **25 min**
- Temp **76 C**, Time **2 min**

Mash step by step

- Heat up **29.7 liter(s)** of strike water to **74.1C**
- Add grains
- Keep mash **40 min** at **67C**
- Keep mash **25 min** at **72C**
- Keep mash **2 min** at **76C**
- Sparge using **27.4 liter(s)** of **76C** water or to achieve **48.1 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	6.5 kg (72.2%)	80 %	5
Grain	Pszeniczny	1 kg (11.1%)	85 %	4
Grain	Strzegom Karmel 150	0.3 kg (3.3%)	75 %	150
Grain	Carahell	0.1 kg (1.1%)	77 %	26
Grain	Carabelge	0.1 kg (1.1%)	80 %	30
Grain	Płatki owsiane	1 kg (11.1%)	85 %	3

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	30 g	60 min	14.3 %
Aroma (end of boil)	Cascade	70 g	10 min	6.9 %
Dry Hop	Mosaic	50 g	3 day(s)	10.4 %
Dry Hop	Amarillo	100 g	3 day(s)	7.1 %
Dry Hop	Cascade	30 g	3 day(s)	6.9 %
Aroma (end of boil)	Perle	35 g	3 min	7 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	23 g	Fermentis