Bitter

- Gravity **8.8 BLG**
- ABV **3.4 %**
- IBU **44**
- SRM **4.9**
- Style **Standard/Ordinary Bitter**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **65 min**
- Evaporation rate **10 %/h**
- Boil size **25.5 liter(s)**

Mash information

- Mash efficiency **69 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **10.8 liter(s)**
- Total mash volume **14.4 liter(s)**

Steps

- Temp **67 C**, Time **60 min**
- Temp **76 C**, Time **5 min**

Mash step by step

- Heat up **10.8 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **5 min** at **76C**
- Sparge using **18.3 liter(s)** of **76C** water or to achieve **25.5 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	3.2 kg *(88.9%)*	85 %	7
Grain	Strzegom Monachijski typ I	0.25 kg *(6.9%)*	79 %	16
Grain	Weyermann - Caraamber	0.15 kg *(4.2%)*	75 %	65

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Comet	20 g	60 min	8.3 %
Boil	Warrior	10 g	15 min	15.5 %
Boil	Comet	10 g	15 min	8.3 %
Boil	Warrior	20 g	5 min	15.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Fermentis