bitter

- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **35**
- SRM **7.2**
- Style **Special/Best/Premium Bitter**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **5 min**
- Evaporation rate **10 %/h**
- Boil size **23.2 liter(s)**

Mash information

- Mash efficiency **82 %**
- Liquor-to-grist ratio **4 liter(s) / kg**
- Mash size **18 liter(s)**
- Total mash volume **22.5 liter(s)**

Steps

- Temp **68 C**, Time **60 min**

Mash step by step

- Heat up **18 liter(s)** of strike water to **74C**
- Add grains
- Keep mash **60 min** at **68C**
- Sparge using **9.7 liter(s)** of **76C** water or to achieve **23.2 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	4 kg *(88.9%)*	85 %	7
Grain	Weyermann - Carared	0.3 kg *(6.7%)*	75 %	45
Grain	Weyermann - Carawheat	0.2 kg *(4.4%)*	77 %	120

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	East Kent Goldings	60 g	60 min	4.7 %
Boil	East Kent Goldings	40 g	5 min	4.7 %

Yeasts

Name	Type	Form	Amount	Laboratory
FM10 O czym szumią wierzby	Ale	Liquid	1000 ml	Fermentum Mobile