

Frela

- Gravity **7.8 BLG**
- ABV **3 %**
- IBU **29**
- SRM **2.7**
- Style **Grodziskie/Graetzer**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **10.8 liter(s)**
- Total mash volume **13.9 liter(s)**

Steps

- Temp **39 C**, Time **15 min**
- Temp **53 C**, Time **25 min**
- Temp **70 C**, Time **30 min**
- Temp **76 C**, Time **0 min**

Mash step by step

- Heat up **10.8 liter(s)** of strike water to **41.7C**
- Add grains
- Keep mash **15 min** at **39C**
- Keep mash **25 min** at **53C**
- Keep mash **30 min** at **70C**
- Keep mash **0 min** at **76C**
- Sparge using **17.6 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Grodziski	3.1 kg (100%)	80 %	4

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	10 g	60 min	10 %
Boil	Marynka	20 g	20 min	10 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safbrew S-33	Ale	Dry	11.5 g	Safbrew