

# Frela

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- 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    |