

FES

- Gravity **19.6 BLG**
- ABV **8.6 %**
- IBU **29**
- SRM **44.8**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **10 liter(s)**
- Trub loss **5 %**
- Size with trub loss **10.5 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **12.8 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12.3 liter(s)**
- Total mash volume **16.4 liter(s)**

Steps

- Temp **64 C**, Time **25 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **12.3 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **25 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **4.6 liter(s)** of **76C** water or to achieve **12.8 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Monachijski	2 kg (48.8%)	80 %	16
Grain	Viking Vienna Malt	1.1 kg (26.8%)	79 %	7
Grain	Strzegom Karmel 600	0.5 kg (12.2%)	68 %	601
Grain	Weyermann - Chocolate Wheat	0.1 kg (2.4%)	74 %	788
Grain	Platki owsiane	0.3 kg (7.3%)	85 %	3
Grain	Black Barley (Roast Barley)	0.1 kg (2.4%)	55 %	985

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	10 g	60 min	13.5 %
Aroma (end of boil)	East Kent Goldings	20 g	10 min	5.1 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale T-58	Ale	Dry	11.5 g	---