

FES

- Gravity **18.7 BLG**
- ABV **8.1 %**
- IBU **56**
- SRM **51**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **40 liter(s)**
- Trub loss **5 %**
- Size with trub loss **42 liter(s)**
- Boil time **60 min**
- Evaporation rate **7 %/h**
- Boil size **47.9 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **2.5 liter(s) / kg**
- Mash size **38.1 liter(s)**
- Total mash volume **53.4 liter(s)**

Steps

- Temp **68 C**, Time **60 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **38.1 liter(s)** of strike water to **77.6C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **10 min** at **78C**
- Sparge using **25.1 liter(s)** of **76C** water or to achieve **47.9 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	BESTMALZ - Best Pilsen	12 kg (78.7%)	80.5 %	4
Grain	Special B Malt	1 kg (6.6%)	65.2 %	315
Grain	Jęczmień palony	0.85 kg (5.6%)	55 %	985
Grain	Weyermann - Carafa I	0.5 kg (3.3%)	70 %	690
Grain	Fawcett - Pale Chocolate	0.3 kg (2%)	71 %	600
Grain	Strzegom Czekoladowy ciemny	0.6 kg (3.9%)	68 %	1200

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	100 g	60 min	12.6 %