

FES

- Gravity **17.3 BLG**
- ABV **7.4 %**
- IBU **40**
- SRM **30.8**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **8 %**
- Size with trub loss **21.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **21.7 liter(s)**
- Total mash volume **28.9 liter(s)**

Steps

- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **30 min**

Mash step by step

- Heat up **21.7 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **40 min** at **64C**
- Keep mash **30 min** at **72C**
- Sparge using **11.5 liter(s)** of **76C** water or to achieve **26 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	5.8 kg (80.2%)	80 %	4
Grain	Caraaroma	0.4 kg (5.5%)	78 %	400
Grain	Carafa	0.2 kg (2.8%)	70 %	664
Grain	Płatki owsiane	0.53 kg (7.3%)	85 %	3
Grain	Jęczmień palony	0.3 kg (4.1%)	55 %	985

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Lunga	37 g	50 min	11 %
Boil	Lublin (Lubelski)	40 g	10 min	4 %