

FES

- Gravity **16.6 BLG**
- ABV **7 %**
- IBU **58**
- SRM **74.3**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **8 liter(s)**
- Trub loss **10 %**
- Size with trub loss **8.8 liter(s)**
- Boil time **60 min**
- Evaporation rate **5 %/h**
- Boil size **10.5 liter(s)**

Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **9.6 liter(s)**
- Total mash volume **12.8 liter(s)**

Steps

- Temp **65 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **9.6 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **45 min** at **65C**
- Keep mash **15 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **4.1 liter(s)** of **76C** water or to achieve **10.5 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Żytni	1 kg (31.3%)	85 %	8
Grain	Steinbach Słód Wędzony Bukiem	0.8 kg (25%)	80 %	5
Grain	Thomas Fawcett żytni crystal	0.2 kg (6.3%)	70 %	160
Grain	Castle Malting Special B	0.2 kg (6.3%)	70 %	350
Grain	Castle Malting Cafe	0.3 kg (9.4%)	75.5 %	480
Grain	Weyermann Pszeniczny Czekoladowy	0.2 kg (6.3%)	68 %	1200
Grain	Weyermann Carafa I	0.5 kg (15.6%)	70 %	900

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	20 g	60 min	13.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
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FM601 Senalio Miele	Ale	Slant	100 ml	Fermentis Safale
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