

FES

- Gravity **14.3 BLG**
- ABV **5.9 %**
- IBU **37**
- SRM **36.6**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **10 %**
- Size with trub loss **13.8 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **17.9 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **14 liter(s)**
- Total mash volume **18 liter(s)**

Steps

- Temp **65 C**, Time **60 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **14 liter(s)** of strike water to **71.4C**
- Add grains
- Keep mash **60 min** at **65C**
- Keep mash **10 min** at **78C**
- Sparge using **7.9 liter(s)** of **76C** water or to achieve **17.9 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Słód jęczmienny monachijski typ I 12-18 EBC Weyermann	0.7 kg (17.5%)	79 %	15
Grain	Caraaroma	0.5 kg (12.5%)	78 %	400
Grain	Słód jęcznienny Pilzneński Weyermann	1 kg (25%)	80 %	4
Grain	Słód jęczmienny Wiedeński Weyermann	1 kg (25%)	79 %	10
Grain	Słód jęcznienny Caramunich Typ II Weyermann	0.5 kg (12.5%)	73 %	120
Grain	Carafa III	0.1 kg (2.5%)	70 %	1400
Grain	Słód jęczmienny Château Cafe Castle Malting	0.2 kg (5%)	77 %	500

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Challenger	40 g	60 min	6.1 %

Yeasts

Name	Type	Form	Amount	Laboratory
us-05	Ale	Dry	11.5 g	---