

FES

- Gravity **15.7 BLG**
- ABV **6.6 %**
- IBU **32**
- SRM **35.2**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **13 liter(s)**
- Trub loss **5 %**
- Size with trub loss **13.7 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **15.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12.2 liter(s)**
- Total mash volume **16.2 liter(s)**

Steps

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

Mash step by step

- Heat up **12.2 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **60 min** at **68C**
- Sparge using **7.6 liter(s)** of **76C** water or to achieve **15.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	1.5 kg (37%)	80 %	5
Grain	Strzegom Monachijski typ I	1.5 kg (37%)	79 %	16
Grain	Strzegom Karmel 150	0.2 kg (4.9%)	75 %	150
Grain	Strzegom Czekoladowy ciemny	0.2 kg (4.9%)	68 %	1200
Grain	Jęczmień palony	0.15 kg (3.7%)	55 %	985
Grain	Strzegom Pszeniczny	0.5 kg (12.3%)	81 %	6

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	10 g	55 min	10 %
Boil	Oktawia	10 g	55 min	7.1 %
Aroma (end of boil)	Lublin (Lubelski)	10 g	5 min	4 %
Aroma (end of boil)	Oktawia	20 g	5 min	7.1 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Slant	120 ml	Safale