

FES't

- Gravity **15.2 BLG**
- ABV **6.3 %**
- IBU **30**
- SRM **31.2**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **22.5 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **28.5 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **21 liter(s)**
- Total mash volume **28 liter(s)**

Steps

- Temp **64 C**, Time **45 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **1 min**

Mash step by step

- Heat up **21 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **45 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **1 min** at **76C**
- Sparge using **14.5 liter(s)** of **76C** water or to achieve **28.5 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	5 kg (71.4%)	80 %	5
Grain	Płatki owsiane	1 kg (14.3%)	85 %	3
Grain	Strzegom Karmel 150	0.25 kg (3.6%)	75 %	150
Grain	Special W	0.25 kg (3.6%)	75 %	300
Grain	Strzegom Czekoladowy ciemny	0.25 kg (3.6%)	68 %	1200
Grain	Jęczmień palony	0.25 kg (3.6%)	55 %	985

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	30 g	60 min	10.5 %
Aroma (end of boil)	Hersbrucker	30 g	10 min	2.8 %

Yeasts

Name	Type	Form	Amount	Laboratory
FM54 Gorączka kalifornijska	Ale	Slant	200 ml	Fermentum Mobile

Extras

Type	Name	Amount	Use for	Time
Fining	Mech irlandzki	4 g	Boil	10 min