Smoked FES

- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **29**
- SRM **26.9**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **36 liter(s)**
- Trub loss **5 %**
- Size with trub loss **37.8 liter(s)**
- Boil time **65 min**
- Evaporation rate **10 %/h**
- Boil size **43.9 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **29.6 liter(s)**
- Total mash volume **38 liter(s)**

Steps

- Temp **64 C**, Time **45 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **15 min**

Mash step by step

- Heat up **29.6 liter(s)** of strike water to **70.3C**
- Add grains
- Keep mash **45 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **15 min** at **78C**
- Sparge using **22.8 liter(s)** of **76C** water or to achieve **43.9 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	6 kg *(71%)*	81 %	4
Grain	Caraaroma	0.35 kg *(4.1%)*	78 %	400
Grain	Carafa	0.35 kg *(4.1%)*	70 %	664
Grain	Jęczmień palony	0.45 kg *(5.3%)*	55 %	985
Grain	Malteurop MepAle (Pale Ale)	1 kg *(11.8%)*	85 %	5
Grain	płatki jęczmienne	0.3 kg *(3.6%)*	85 %	3

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Lublin (Lubelski)	60 g	60 min	4 %
Boil	Fuggles	50 g	60 min	4.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
FM13 Irlandzkie Ciemności	Ale	Slant	1000 ml	Fermentum Mobile

Extras

Recipe has been printed via **BREWNESS.com** - a complex online solution for homebrewers to track brewing process easily.

Type	Name	Amount	Use for	Time
Flavor	suska sechlońska	250 g	Boil	10 min