

## FES

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- Gravity **14.9 BLG**
- ABV ---
- IBU **32**
- SRM **40**
- Style **Foreign Extra Stout**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **10 %**
- Size with trub loss **22 liter(s)**
- Boil time **75 min**
- Evaporation rate **15 %/h**
- Boil size **26.1 liter(s)**

### Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16.3 liter(s)**
- Total mash volume **21.7 liter(s)**

### Steps

- Temp **68 C**, Time **0 min**
- Temp **65 C**, Time **40 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **5 min**

### Mash step by step

- Heat up **16.3 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **40 min** at **65C**
- Keep mash **0 min** at **68C**
- Keep mash **30 min** at **72C**
- Keep mash **5 min** at **76C**
- Sparge using **15.2 liter(s)** of **76C** water or to achieve **26.1 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	4 kg (73.7%)	81 %	4
Grain	Strzegom Monachijski typ I	0.4 kg (7.4%)	79 %	16
Grain	Briess Cherry	0.2 kg (3.7%)	80.5 %	10
Grain	Pszeniczny ciemny	0.2 kg (3.7%)	82 %	20
Grain	Caraaroma	0.2 kg (3.7%)	78 %	400
Grain	Czekoladowy	0.2 kg (3.7%)	60 %	1000
Grain	Jęczmień palony	0.075 kg (1.4%)	55 %	1300
Grain	Black of Black	0.15 kg (2.8%)	72 %	1500

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	20 g	60 min	13.5 %
Boil	Premiant	10 g	10 min	8 %

### Yeasts

<b>Name</b>	<b>Type</b>	<b>Form</b>	<b>Amount</b>	<b>Laboratory</b>
Wyeast - London Ale	Ale	Slant	200 ml	Wyeast Labs

### **Extras**

<b>Type</b>	<b>Name</b>	<b>Amount</b>	<b>Use for</b>	<b>Time</b>
Fining	Mech Irlandzki	2.5 g	Boil	15 min