

## FES

- Gravity **15.7 BLG**
- ABV **6.6 %**
- IBU **36**
- SRM **22**
- Style **Foreign Extra Stout**

### Batch size

- Expected quantity of finished beer **11 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **14.5 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **12.6 liter(s)**
- Total mash volume **16.2 liter(s)**

### Steps

- Temp **62 C**, Time **30 min**
- Temp **72 C**, Time **40 min**
- Temp **78 C**, Time **5 min**

### Mash step by step

- Heat up **12.6 liter(s)** of strike water to **68C**
- Add grains
- Keep mash **30 min** at **62C**
- Keep mash **40 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **5.5 liter(s)** of **76C** water or to achieve **14.5 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	2.2 kg (61.3%)	82 %	4
Grain	Viking Wheat Malt	0.3 kg (8.4%)	83 %	5
Grain	Strzegom Monachijski typ I	0.45 kg (12.5%)	79 %	16
Grain	Caramunich® typ I	0.11 kg (3.1%)	73 %	80
Grain	Weyermann Caramunich 3	0.08 kg (2.2%)	76 %	150
Grain	Strzegom Czekoladowy jasny	0.1 kg (2.8%)	68 %	400
Grain	Fawcett - Pszeniczny Czekoladowy	0.06 kg (1.7%)	73 %	1001
Grain	Płatki owsiane	0.22 kg (6.1%)	85 %	3
Grain	Jęczmień palony	0.07 kg (1.9%)	55 %	985

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	lunga	17 g	60 min	11 %
Boil	Lublin (Lubelski)	17 g	10 min	4 %

Dry Hop	Sybilla	30 g	3 day(s)	3.5 %
Dry Hop	lunga	43 g	3 day(s)	11 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Slant	800 ml	Fermentis

## Notes

- Palone dodane w 65 min zacierania  
*Oct 26, 2018, 11:19 PM*