

## 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    | Iunga             | 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*