

13-tego w piątek (FES)

- Gravity **15.7 BLG**
- ABV ---
- IBU **46**
- SRM **32.7**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **10 liter(s)**
- Trub loss **4 %**
- Size with trub loss **10.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **11 %/h**
- Boil size **13.2 liter(s)**

Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **9.4 liter(s)**
- Total mash volume **12.5 liter(s)**

Steps

- Temp **63 C**, Time **25 min**
- Temp **73 C**, Time **35 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **9.4 liter(s)** of strike water to **70.1C**
- Add grains
- Keep mash **25 min** at **63C**
- Keep mash **35 min** at **73C**
- Keep mash **10 min** at **78C**
- Sparge using **6.9 liter(s)** of **76C** water or to achieve **13.2 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|-----------------------------|---------------|-------|------|
| Grain | Viking Pale Ale malt | 2.5 kg (80%) | 80 % | 6 |
| Grain | Strzegom Monachijski typ II | 0.25 kg (8%) | 79 % | 20 |
| Grain | Strzegom Czekoladowy 400 | 0.25 kg (8%) | 68 % | 400 |
| Grain | Weyermann - Carafa III | 0.125 kg (4%) | 70 % | 1400 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|--------------------|--------|--------|------------|
| Boil | Admiral | 15 g | 50 min | 14.3 % |
| Boil | Sybilla | 20 g | 1 min | 6 % |
| Boil | East Kent Goldings | 20 g | 1 min | 5.1 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-----------------------|------|------|--------|------------|
| Danstar - Windsor Ale | Ale | Dry | 7 g | Danstar |