

## Warszawa e.9 - 23.10.2022

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **34**
- SRM **3.8**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **18 liter(s)**
- Trub loss **5 %**
- Size with trub loss **18.9 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **23.8 liter(s)**

### Mash information

- Mash efficiency **96 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **10.3 liter(s)**
- Total mash volume **13.7 liter(s)**

### Steps

- Temp **62 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **76 C**, Time **1 min**

### Mash step by step

- Heat up **10.3 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **45 min** at **62C**
- Keep mash **15 min** at **72C**
- Keep mash **1 min** at **76C**
- Sparge using **16.9 liter(s)** of **76C** water or to achieve **23.8 liter(s)** of wort

### Fermentables

| Type  | Name                 | Amount          | Yield | EBC |
|-------|----------------------|-----------------|-------|-----|
| Grain | Castle Pale Ale      | 1.35 kg (39.4%) | 80 %  | 8   |
| Grain | Viking Pale Ale malt | 2 kg (58.3%)    | 80 %  | 5   |
| Grain | Pszeniczny           | 0.08 kg (2.3%)  | 85 %  | 4   |

### Hops

| Use for             | Name     | Amount | Time   | Alpha acid |
|---------------------|----------|--------|--------|------------|
| Boil                | Magnum   | 18 g   | 60 min | 10.6 %     |
| Boil                | exp 2/20 | 10 g   | 15 min | 7.5 %      |
| Boil                | Książęcy | 10 g   | 15 min | 7 %        |
| Aroma (end of boil) | exp 2/20 | 15 g   | 1 min  | 7.5 %      |
| Aroma (end of boil) | Książęcy | 15 g   | 1 min  | 7 %        |

### Yeasts

| Name         | Type | Form | Amount | Laboratory |
|--------------|------|------|--------|------------|
| Safale US-05 | Ale  | Dry  | 11.5 g | Fermentis  |