

## ppa

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- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **62**
- SRM **3.6**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **15 liter(s)**
- Trub loss **5 %**
- Size with trub loss **17.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **20.7 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **14 liter(s)**
- Total mash volume **18 liter(s)**

### Steps

- Temp **63 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **76 C**, Time **5 min**

### Mash step by step

- Heat up **14 liter(s)** of strike water to **69.1C**
- Add grains
- Keep mash **45 min** at **63C**
- Keep mash **15 min** at **72C**
- Keep mash **5 min** at **76C**
- Sparge using **10.7 liter(s)** of **76C** water or to achieve **20.7 liter(s)** of wort

### Fermentables

| Type  | Name                 | Amount       | Yield | EBC |
|-------|----------------------|--------------|-------|-----|
| Grain | Viking Pilsner malt  | 3.6 kg (90%) | 82 %  | 4   |
| Grain | Weyermann - Carapils | 0.4 kg (10%) | 78 %  | 4   |

### Hops

| Use for   | Name     | Amount | Time     | Alpha acid |
|-----------|----------|--------|----------|------------|
| Boil      | Iunga    | 25 g   | 60 min   | 10.9 %     |
| Whirlpool | Izabella | 50 g   | 30 min   | 6.5 %      |
| Whirlpool | Książęcy | 25 g   | 30 min   | 7 %        |
| Dry Hop   | Izabella | 50 g   | 3 day(s) | 6.5 %      |
| Dry Hop   | Książęcy | 50 g   | 3 day(s) | 7 %        |

### Yeasts

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