

Pale ale

- Gravity **15.9 BLG**
- ABV ---
- IBU **29**
- SRM **8.8**
- Style **English IPA**

Batch size

- Expected quantity of finished beer **36 liter(s)**
- Trub loss **5 %**
- Size with trub loss **37.8 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **45.5 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **31.5 liter(s)**
- Total mash volume **42 liter(s)**

Steps

- Temp **64 C**, Time **30 min**
- Temp **52 C**, Time **15 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **15 min**

Mash step by step

- Heat up **31.5 liter(s)** of strike water to **57.3C**
- Add grains
- Keep mash **15 min** at **52C**
- Keep mash **30 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **15 min** at **76C**
- Sparge using **24.5 liter(s)** of **76C** water or to achieve **45.5 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|--------------------|---------------|-------|-----|
| Grain | Pilzneński | 5 kg (47.6%) | 81 % | 4 |
| Grain | Castle Pale Ale | 3 kg (28.6%) | 80 % | 8 |
| Grain | Monachijski | 1 kg (9.5%) | 80 % | 16 |
| Grain | Strzegom Wiedeński | 1 kg (9.5%) | 79 % | 10 |
| Grain | Karmelowy Czerwony | 0.5 kg (4.8%) | 75 % | 59 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|------------|--------|--------|------------|
| Boil | Marynka | 30 g | 60 min | 10 % |
| Boil | Centennial | 20 g | 30 min | 10.5 % |
| Aroma (end of boil) | Monroe | 30 g | 15 min | 2.5 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------------|------|-------|--------|------------|
| Safale S-04 | Ale | Slant | 500 ml | --- |