

## Full Aroma Hops , wersja pod pilsa

- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **54**
- SRM **4.4**
- Style **Classic American Pilsner**

### Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.6 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **15.9 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.3 liter(s) / kg**
- Mash size **9.6 liter(s)**
- Total mash volume **12.5 liter(s)**

### Steps

- Temp **40 C**, Time **1 min**
- Temp **62 C**, Time **20 min**
- Temp **72 C**, Time **45 min**
- Temp **75 C**, Time **10 min**

### Mash step by step

- Heat up **9.6 liter(s)** of strike water to **43C**
- Add grains
- Keep mash **1 min** at **40C**
- Keep mash **20 min** at **62C**
- Keep mash **45 min** at **72C**
- Keep mash **10 min** at **75C**
- Sparge using **9.2 liter(s)** of **76C** water or to achieve **15.9 liter(s)** of wort

### Fermentables

| Type  | Name                  | Amount         | Yield | EBC |
|-------|-----------------------|----------------|-------|-----|
| Grain | Viking Pilsner malt   | 2.7 kg (93.1%) | 82 %  | 4   |
| Grain | Karmelowy Jasny 30EBC | 0.2 kg (6.9%)  | 75 %  | 30  |

### Hops

| Use for | Name              | Amount  | Time     | Alpha acid |
|---------|-------------------|---------|----------|------------|
| Boil    | Magnum            | 17.14 g | 90 min   | 10.5 %     |
| Boil    | Lublin (Lubelski) | 17.14 g | 45 min   | 6 %        |
| Boil    | Amarillo          | 3.43 g  | 5 min    | 8.3 %      |
| Dry Hop | Amarillo          | 6.86 g  | 4 day(s) | 8.3 %      |

### Yeasts

| Name        | Type | Form | Amount | Laboratory         |
|-------------|------|------|--------|--------------------|
| Safale S-04 | Ale  | Dry  | 14.4 g | Pierwsze pokolenie |