

## PL

- Gravity **18 BLG**
- ABV **7.7 %**
- IBU **22**
- SRM **28.4**
- Style **German Pilsner (Pils)**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **25.7 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15.1 liter(s)**
- Total mash volume **20.2 liter(s)**

### Steps

- Temp **63 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **10 min**

### Mash step by step

- Heat up **15.1 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **30 min** at **63C**
- Keep mash **30 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **15.7 liter(s)** of **76C** water or to achieve **25.7 liter(s)** of wort

### Fermentables

| Type           | Name                          | Amount         | Yield | EBC |
|----------------|-------------------------------|----------------|-------|-----|
| Grain          | Weyermann - Pale Ale Malt     | 3.5 kg (23.3%) | 82 %  | 7   |
| Grain          | Weyermann - Light Munich Malt | 1 kg (6.6%)    | 82 %  | 14  |
| Grain          | Płatki owsiane                | 0.3 kg (2%)    | 80 %  | 3   |
| Grain          | Simpsons - Crystal Medium     | 0.25 kg (1.7%) | 69 %  | 108 |
| Liquid Extract | WES ekstrakt słodowy jasny    | 10 kg (66.4%)  | 12 %  | 45  |

### Hops

| Use for | Name              | Amount | Time   | Alpha acid |
|---------|-------------------|--------|--------|------------|
| Boil    | Mosaic            | 20 g   | 60 min | 12.5 %     |
| Boil    | Marynka           | 0 g    | 30 min | 10 %       |
| Boil    | Lublin (Lubelski) | 0 g    | 20 min | 4 %        |

### Yeasts

| Name | Type | Form | Amount | Laboratory |
|------|------|------|--------|------------|
|------|------|------|--------|------------|

|                                       |       |     |      |                 |
|---------------------------------------|-------|-----|------|-----------------|
| Mangrove Jack's<br>M84 Bohemian Lager | Lager | Dry | 11 g | Mangrove Jack's |
|---------------------------------------|-------|-----|------|-----------------|