

TMV

- Gravity **11.7 BLG**
- ABV **4.7 %**
- IBU **33**
- SRM **33.3**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **17 liter(s)**
- Total mash volume **21.8 liter(s)**

Steps

- Temp **63 C**, Time **40 min**
- Temp **72 C**, Time **20 min**
- Temp **78 C**, Time **5 min**

Mash step by step

- Heat up **17 liter(s)** of strike water to **69.1C**
- Add grains
- Keep mash **40 min** at **63C**
- Keep mash **20 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **14.3 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------------|----------------|-------|------|
| Grain | Viking Pilsner malt | 2.5 kg (51.5%) | 82 % | 4 |
| Grain | Strzegom Monachijski typ II | 1 kg (20.6%) | 79 % | 22 |
| Grain | Strzegom Karmel 600 | 0.1 kg (2.1%) | 68 % | 601 |
| Grain | Weyermann - Carafa III | 0.15 kg (3.1%) | 70 % | 1024 |
| Grain | Strzegom Czekoladowy ciemny | 0.25 kg (5.2%) | 68 % | 1200 |
| Grain | Fawcett - Pszeniczny Czekoladowy | 0.15 kg (3.1%) | 73 % | 1001 |
| Grain | Strzegom Wiedeński | 0.7 kg (14.4%) | 79 % | 10 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|-----------------------|--------|--------|------------|
| Boil | Saaz (Czech Republic) | 30 g | 60 min | 4.5 % |
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| | | | | |
|---------------------|-----------------------|------|--------|-------|
| Aroma (end of boil) | Saaz (Czech Republic) | 20 g | 15 min | 4.5 % |
| Aroma (end of boil) | Saaz (Czech Republic) | 20 g | 5 min | 4.5 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|------------------------------------|-------|-------|--------|-----------------|
| Mangrove Jack's M84 Bohemian Lager | Lager | Slant | 500 ml | Mangrove Jack's |