

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 %
Boil	Saaz (Czech Republic)	30 g	30 min	4.5 %

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