

Black violin

- Gravity **22 BLG**
- ABV **9.9 %**
- IBU **23**
- SRM **31.8**
- Style **Baltic Porter**

Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.6 liter(s)**
- Boil time **75 min**
- Evaporation rate **10 %/h**
- Boil size **16.9 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **17 liter(s)**
- Total mash volume **22.7 liter(s)**

Steps

- Temp **63 C**, Time **40 min**
- Temp **72 C**, Time **25 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **17 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **40 min** at **63C**
- Keep mash **25 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **5.6 liter(s)** of **76C** water or to achieve **16.9 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Munich Malt	2 kg (35.2%)	80 %	18
Grain	Vienna Malt	1.5 kg (26.4%)	78 %	8
Grain	Briess - Pilsen Malt	1.25 kg (22%)	80.5 %	2
Grain	Fawcett - Pale Crystal	0.375 kg (6.6%)	72.8 %	90
Grain	Fawcett - Dark Crystal	0.25 kg (4.4%)	71 %	300
Grain	Chocolate Malt (UK)	0.1 kg (1.8%)	73 %	887
Grain	Briess - Black Malt	0.1 kg (1.8%)	55 %	985
Grain	Roasted Barley	0.1 kg (1.8%)	55 %	591

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	20 g	60 min	10 %
Aroma (end of boil)	Lublin (Lubelski)	10 g	0 min	4 %

Yeasts

Name	Type	Form	Amount	Laboratory
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Mangrove Jack's M84 Bohemian Lager	Lager	Dry	22 g	Mangrove Jack's
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