Schwarzbier

- Gravity **13.3 BLG**
- ABV **5.5 %**
- IBU **23**
- SRM **24.9**
- Style **Schwarzbier**

Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **31.7 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **22.2 liter(s)**
- Total mash volume **28.6 liter(s)**

Steps

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

Mash step by step

- Heat up **22.2 liter(s)** of strike water to **69.1C**
- Add grains
- Keep mash **40 min** at **63C**
- Keep mash **40 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **15.9 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	5 kg *(78.7%)*	81 %	4
Grain	Słód Caramunich Typ II Weyermann	0.5 kg *(7.9%)*	73 %	120
Grain	Biscuit Malt	0.25 kg *(3.9%)*	79 %	45
Grain	Carafa II	0.25 kg *(3.9%)*	70 %	812
Grain	Fawcett - Pale Chocolate	0.2 kg *(3.1%)*	71 %	600
Grain	Fawcett - Pszeniczny Czekoladowy	0.15 kg *(2.4%)*	73 %	900

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	20 g	60 min	10 %
Boil	Hallertau Mittelfruh	25 g	15 min	3.8 %
Boil	Hallertau Mittelfruh	25 g	5 min	3.8 %