

Fortuna Czarne - klon

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **17**
- SRM **28.2**
- 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 **15 %/h**
- Boil size **33.1 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **19.1 liter(s)**
- Total mash volume **24.5 liter(s)**

Steps

- Temp **70 C**, Time **60 min**
- Temp **76 C**, Time **1 min**

Mash step by step

- Heat up **19.1 liter(s)** of strike water to **77.1C**
- Add grains
- Keep mash **60 min** at **70C**
- Keep mash **1 min** at **76C**
- Sparge using **19.5 liter(s)** of **76C** water or to achieve **33.1 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	4.6 kg (78%)	80 %	5
Grain	Strzegom Karmel 600	0.55 kg (9.3%)	68 %	601
Grain	Weyermann - Dehusked Carafo III	0.3 kg (5.1%)	70 %	1024
Sugar	Maltodekstryna	0.45 kg (7.6%)	95 %	0

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	30 g	60 min	6.5 %