

# Black

- Gravity **13.6 BLG**
- ABV **5.6 %**
- IBU **67**
- SRM **21.2**
- Style **Black IPA**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16.5 liter(s)**
- Total mash volume **22 liter(s)**

## Steps

- Temp **67 C**, Time **90 min**
- Temp **67 C**, Time **15 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **16.5 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **15 min** at **67C**
- Keep mash **90 min** at **67C**
- Keep mash **5 min** at **78C**
- Sparge using **14.3 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	4.6 kg (83.6%)	80 %	5
Grain	Strzegom Czekoladowy 400	0.4 kg (7.3%)	68 %	400
Grain	chocolate	0.3 kg (5.5%)	--- %	---
Grain	Carafa II	0.2 kg (3.6%)	70 %	812

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Bravo	25 g	60 min	15.5 %
Boil	Dr Rudi	25 g	20 min	11.8 %
Boil	Cascade	15 g	15 min	6 %
Boil	Cascade	15 g	5 min	6 %
Boil	Cascade	20 g	1 min	6 %
Dry Hop	Cascade	30 g	4 day(s)	6 %

## Yeasts

Name	Type	Form	Amount	Laboratory
us 04	Ale	Dry	10 g	---