

# black ipas

- Gravity **15.4 BLG**
- ABV **6.5 %**
- IBU **58**
- SRM **32.1**
- Style **Black IPA**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **4 %**
- Size with trub loss **21.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **5 %/h**
- Boil size **23.5 liter(s)**

## Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **2.5 liter(s) / kg**
- Mash size **14.5 liter(s)**
- Total mash volume **20.3 liter(s)**

## Steps

- Temp **70 C**, Time **1 min**
- Temp **66 C**, Time **60 min**
- Temp **78 C**, Time **15 min**

## Mash step by step

- Heat up **14.5 liter(s)** of strike water to **75.2C**
- Add grains
- Keep mash **60 min** at **66C**
- Keep mash **1 min** at **70C**
- Keep mash **15 min** at **78C**
- Sparge using **14.8 liter(s)** of **76C** water or to achieve **23.5 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	pale ale	5 kg (86.2%)	80 %	6
Grain	Briess - Chocolate Malt	0.5 kg (8.6%)	60 %	690
Grain	Carafa II	0.3 kg (5.2%)	70 %	812

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Bravo	20 g	50 min	15.5 %
Boil	Dr Rudi	20 g	45 min	11.8 %
Boil	Cascade	15 g	15 min	6 %
Boil	Cascade	15 g	5 min	6 %
Boil	Cascade	15 g	1 min	6 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11 g	Safale