

# Black

- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **65**
- SRM **22.7**
- Style **Black IPA**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16.6 liter(s)**
- Total mash volume **22.2 liter(s)**

## Steps

- Temp **66 C**, Time **40 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **10 min**

## Mash step by step

- Heat up **16.6 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **40 min** at **66C**
- Keep mash **10 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **15.4 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	5 kg (90.1%)	81 %	4
Grain	Weyermann - Carapils	0.1 kg (1.8%)	78 %	4
Grain	Strzegom Karmel 150	0.1 kg (1.8%)	75 %	150
Grain	Carafa III	0.25 kg (4.5%)	70 %	1034
Grain	Carafa III	0.1 kg (1.8%)	70 %	1034

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	lunga	50 g	60 min	11 %
Aroma (end of boil)	Cascade	50 g	5 min	6 %
Dry Hop	Cascade	50 g	5 day(s)	6 %

## Yeasts

Name	Type	Form	Amount	Laboratory
US 05	Ale	Dry	11.5 g	---