

# Black skull

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- Gravity **11.7 BLG**
- ABV **4.7 %**
- IBU **62**
- SRM **28.2**
- Style **American Stout**

## Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.7 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16.8 liter(s)**
- Total mash volume **22.4 liter(s)**

## Steps

- Temp **67 C**, Time **60 min**

## Mash step by step

- Heat up **16.8 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **60 min** at **67C**
- Sparge using **16.5 liter(s)** of **76C** water or to achieve **27.7 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Briess - Pale Ale Malt	4.5 kg (80.4%)	80 %	7
Grain	Oats, Malted	0.5 kg (8.9%)	80 %	2
Grain	Briess - Dark Chocolate Malt	0.3 kg (5.4%)	60 %	827
Grain	Black Barley (Roast Barley)	0.3 kg (5.4%)	55 %	985

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Galena	50 g	60 min	12 %
Aroma (end of boil)	Galena	50 g	0 min	12 %

## Yeasts

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