

## dark

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- Gravity **14.1 BLG**
- ABV ---
- IBU **33**
- SRM **40**
- Style **Dry Stout**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **10 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **25.3 liter(s)**

### Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **18 liter(s)**
- Total mash volume **24 liter(s)**

### Steps

- Temp **66 C**, Time **45 min**
- Temp **72 C**, Time **10 min**
- Temp **76 C**, Time **1 min**

### Mash step by step

- Heat up **18 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **45 min** at **66C**
- Keep mash **10 min** at **72C**
- Keep mash **1 min** at **76C**
- Sparge using **13.3 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pale Ale	4.5 kg (75%)	70 %	5
Grain	Strzegom Karmel 300	1 kg (16.7%)	60 %	300
Grain	Strzegom Czekoladowy ciemny	0.5 kg (8.3%)	60 %	1200

### Hops

Use for	Name	Amount	Time	Alpha acid
Aroma (end of boil)	east	30 g	15 min	7 %
Aroma (end of boil)	Mosaic	15 g	20 min	10 %
Boil	Tradition	20 g	50 min	5.5 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	11 g	Fermentis