

# Porter czekoladowy

- Gravity **17.5 BLG**
- ABV **7.5 %**
- IBU **28**
- SRM **33.3**
- Style **Robust Porter**

## Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **1 %**
- Size with trub loss **23.2 liter(s)**
- Boil time **60 min**
- Evaporation rate **1 %/h**
- Boil size **25.8 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **24.3 liter(s)**
- Total mash volume **32.4 liter(s)**

## Steps

- Temp **62 C**, Time **30 min**
- Temp **72 C**, Time **45 min**
- Temp **78 C**, Time **15 min**

## Mash step by step

- Heat up **24.3 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **30 min** at **62C**
- Keep mash **45 min** at **72C**
- Keep mash **15 min** at **78C**
- Sparge using **9.6 liter(s)** of **76C** water or to achieve **25.8 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Monachijski	3 kg (37%)	80 %	16
Grain	Strzegom Wiedeński	2.5 kg (30.9%)	79 %	10
Grain	Pilzneński	1.5 kg (18.5%)	81 %	4
Grain	Strzegom Karmel 300	0.5 kg (6.2%)	70 %	299
Grain	Czekoladowy	0.4 kg (4.9%)	60 %	788
Grain	Jęczmień palony	0.1 kg (1.2%)	55 %	985
Grain	Barwiący	0.1 kg (1.2%)	55 %	985

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	25 g	60 min	10 %
Aroma (end of boil)	Pilgrim	15 g	15 min	9 %
Aroma (end of boil)	Green Bullet	10 g	5 min	11 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safabrew t-58	Ale	Dry	11.5 g	---