

Czarny ląd

- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **32**
- SRM **32.2**
- Style **Dry Stout**

Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **25.3 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **29.5 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15.6 liter(s)**
- Total mash volume **20.8 liter(s)**

Steps

- Temp **62 C**, Time **40 min**
- Temp **72 C**, Time **20 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **15.6 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **40 min** at **62C**
- Keep mash **10 min** at **72C**
- Keep mash **20 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **19.1 liter(s)** of **76C** water or to achieve **29.5 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	3 kg (57.7%)	80 %	5
Grain	Strzegom Pilzneński	1 kg (19.2%)	80 %	4
Grain	Strzegom Karmel 600	0.2 kg (3.8%)	68 %	601
Grain	Bestmalz Carmel Pils	0.2 kg (3.8%)	75 %	5
Grain	Strzegom Czekoladowy 1200	0.25 kg (4.8%)	68 %	1202
Grain	Barley, Flaked	0.25 kg (4.8%)	70 %	4
Grain	Jęczmień palony	0.3 kg (5.8%)	55 %	985

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	35 g	70 min	8.8 %
Dry Hop	Palisade	50 g	4 day(s)	6.1 %

Yeasts

Name	Type	Form	Amount	Laboratory
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Safale S-04	Ale	Dry	11.5 g	Safale
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