

Czarno to widzę

- Gravity **15.2 BLG**
- ABV ---
- IBU **37**
- SRM **33.1**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **80 min**
- Evaporation rate **10 %/h**
- Boil size **26.1 liter(s)**

Mash information

- Mash efficiency **65 %**
- Liquor-to-grist ratio **2.8 liter(s) / kg**
- Mash size **18.2 liter(s)**
- Total mash volume **24.7 liter(s)**

Steps

- Temp **64 C**, Time **45 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **5 min**

Mash step by step

- Heat up **18.2 liter(s)** of strike water to **71.9C**
- Add grains
- Keep mash **45 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **5 min** at **76C**
- Sparge using **14.4 liter(s)** of **76C** water or to achieve **26.1 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	5 kg (76.9%)	80 %	4
Grain	Strzegom Karmel 300	0.3 kg (4.6%)	70 %	299
Grain	Weyermann - Carafa I	0.1 kg (1.5%)	70 %	690
Grain	Jęczmień palony	0.2 kg (3.1%)	55 %	985
Grain	Płatki owsiane	0.4 kg (6.2%)	85 %	3
Grain	BESTMALZ - Best Pilsen	0.5 kg (7.7%)	80.5 %	4

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Aurora	35 g	55 min	8.5 %
Boil	Styrian Golding	40 g	10 min	3.6 %

Yeasts

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