

Karmelowe

- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **13**
- SRM **16.3**
- Style **Sweet Stout**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **14.3 liter(s)**
- Total mash volume **18.4 liter(s)**

Steps

- Temp **52 C**, Time **20 min**
- Temp **64 C**, Time **10 min**
- Temp **72 C**, Time **45 min**

Mash step by step

- Heat up **14.3 liter(s)** of strike water to **56.6C**
- Add grains
- Keep mash **20 min** at **52C**
- Keep mash **10 min** at **64C**
- Keep mash **45 min** at **72C**
- Sparge using **15.1 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Żytni	1 kg (24.4%)	85 %	8
Grain	Viking Pale Ale malt	1 kg (24.4%)	80 %	5
Grain	golden ale strzegom	1 kg (24.4%)	80 %	9
Grain	Strzegom Monachijski typ I	0.4 kg (9.8%)	79 %	16
Grain	Strzegom Karmel 150	0.2 kg (4.9%)	75 %	150
Grain	Strzegom Karmel 400	0.5 kg (12.2%)	70 %	350

Hops

Use for	Name	Amount	Time	Alpha acid
Aroma (end of boil)	Nadwiślański	30 g	15 min	5.9 %
Aroma (end of boil)	Lublin (Lubelski)	10 g	15 min	5 %

Yeasts

Name	Type	Form	Amount	Laboratory
gozdawa - porter&kvas	Ale	Dry	10 g	---