

Atak karmelu

- Gravity **12.9 BLG**
- ABV ---
- IBU **37**
- SRM **52.2**
- Style **Schwarzbier**

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 **27.6 liter(s)**

Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.4 liter(s)**
- Total mash volume **17.8 liter(s)**

Steps

- Temp **68 C**, Time **60 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **13.4 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **10 min** at **76C**
- Sparge using **18.7 liter(s)** of **76C** water or to achieve **27.6 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	2 kg (44.9%)	81 %	4
Grain	Monachijski	1 kg (22.5%)	80 %	16
Grain	Fawcett - Pszeniczny Czekoladowy	0.25 kg (5.6%)	73 %	1001
Grain	Strzegom Karmel 600	0.2 kg (4.5%)	68 %	601
Grain	Carahell	0.1 kg (2.2%)	77 %	26
Grain	Biscuit Malt	0.25 kg (5.6%)	79 %	45
Grain	Special B Castle	0.25 kg (5.6%)	70 %	350
Grain	Jęczmień palony	0.2 kg (4.5%)	55 %	985
Grain	Caraaroma	0.2 kg (4.5%)	78 %	400

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	25 g	50 min	10 %
Aroma (end of boil)	Marynka	25 g	10 min	10 %

Yeasts

Name	Type	Form	Amount	Laboratory
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Wyeast - Bavarian Lager	Lager	Liquid	125 ml	Wyeast Labs
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