

Munich Dunkel 12° test

- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **27**
- SRM **10**
- Style **Munich Dunkel**

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 **24.2 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **14.1 liter(s)**
- Total mash volume **18.8 liter(s)**

Steps

- Temp **63 C**, Time **25 min**
- Temp **72 C**, Time **25 min**
- Temp **75 C**, Time **10 min**
- Temp **78 C**, Time **0 min**

Mash step by step

- Heat up **14.1 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **25 min** at **63C**
- Keep mash **25 min** at **72C**
- Keep mash **10 min** at **75C**
- Keep mash **0 min** at **78C**
- Sparge using **14.8 liter(s)** of **76C** water or to achieve **24.2 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Monachijski	3.7 kg (78.7%)	80 %	16
Grain	Pilzneński	0.8 kg (17%)	81 %	4
Grain	Carahell	0.1 kg (2.1%)	77 %	26
Grain	Caraaroma	0.1 kg (2.1%)	78 %	400

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	25 g	50 min	10 %
Boil	Lublin (Lubelski)	10 g	0 min	4 %

Yeasts

Name	Type	Form	Amount	Laboratory
Saflager S-23	Lager	Dry	11.5 g	Fermentis