

## #20 Munich Dunkel

- Gravity **13.8 BLG**
- ABV **5.7 %**
- IBU **21**
- SRM **33**
- Style **Munich Dunkel**

### Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **0 %**
- Size with trub loss **23 liter(s)**
- Boil time **0 min**
- Evaporation rate **10 %/h**
- Boil size --- **liter(s)**

### Mash information

- Mash efficiency **98 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **14.4 liter(s)**
- Total mash volume **19.2 liter(s)**

### Steps

- Temp **65 C**, Time **30 min**
- Temp **67 C**, Time **15 min**
- Temp **78 C**, Time **5 min**

### Mash step by step

- Heat up **14.4 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **30 min** at **65C**
- Keep mash **15 min** at **67C**
- Keep mash **5 min** at **78C**
- Sparge using **-9.6 liter(s)** of **76C** water

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Słodownia Strzegom - monachijski I	2.5 kg (52.1%)	79 %	12
Grain	Słodownia Strzegom - wiedeński	1.5 kg (31.3%)	79 %	7
Grain	Weyermann - Caraamber	0.5 kg (10.4%)	75 %	700
Grain	Słodownia Strzegom - czekoladowy 1200	0.2 kg (4.2%)	70 %	1200
Grain	Weyermann - Carafa III	0.1 kg (2.1%)	70 %	1024

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	16 g	60 min	8.7 %
Boil	Spalt	25 g	30 min	3.3 %
Boil	Spalt	25 g	5 min	3.3 %

### Yeasts

Name	Type	Form	Amount	Laboratory
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FM31 - Bawarska dolina	Lager	Culture	200 g	Fermentum Mobile
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