

Munich Dunkel 13 Blg Centrum Piwowarstwa

- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **17**
- SRM **14.5**
- Style **Munich Dunkel**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **0 %**
- Size with trub loss **20 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **24.2 liter(s)**

Mash information

- Mash efficiency **83 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **16.1 liter(s)**
- Total mash volume **20.7 liter(s)**

Steps

- Temp **62 C**, Time **20 min**
- Temp **72 C**, Time **40 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **16.1 liter(s)** of strike water to **68C**
- Add grains
- Keep mash **20 min** at **62C**
- Keep mash **40 min** at **72C**
- Keep mash **10 min** at **76C**
- Sparge using **12.7 liter(s)** of **76C** water or to achieve **24.2 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	1.2 kg (26.1%)	80 %	4
Grain	Strzegom Monachijski typ I	2.9 kg (63%)	79 %	16
Grain	Karmelowy Jasny 30EBC	0.1 kg (2.2%)	75 %	30
Grain	Strzegom Karmel 600	0.2 kg (4.3%)	68 %	601
Grain	Viking melanoidynowy	0.2 kg (4.3%)	75 %	60

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Perle	25 g	60 min	5 %
Aroma (end of boil)	Perle	25 g	5 min	5 %

Yeasts

Name	Type	Form	Amount	Laboratory
Danstar - Nottingham	Ale	Dry	21 g	Danstar