

Category	Tier Nr.	Name	Description	Example	Example Labelling	Optical calibration	Intensity calibration	Mechanical calibration	Experiment/ Sample	Microscope hardware specifications	Image acquisition settings
Descriptive	1	Minimum Information About Light Microscopy/ Documentation/ Material and Methods	Reporting qualitative effects without quantification; identification of non-refractive limited objects followed by basic feature extraction and statistical analysis	Transfection control, viability assay, counting of cells and nuclei, expression level measurements, study of cellular sub-compartment	FISH, Immuno Fluorescence	recommended quarterly (not required)	recommended annually (not required)		- experiment description and date - sample description - experimenter name - mounting medium	- microscope manufacturer, name and type - light source manufacturer, wavelenght and type - objective manufacturer, magnification, NA and correction - filter/dichroic transmittance range - detector manufacturer and type	- acquisition date - immersion medium name and refractive index - calibrated magnification - exposure time; pixel dwell time - channel name, color, contrast method and acquisition mode, illumination type, fluorophore - image dimension order and number, channel order - physical pixel size x, y, and z
Analytical	2	Advanced Quantification and/or Live Cell Imaging	Identification and localization of refraction-limited particles, super-resolution microscopy; tracking of intracellular dynamics	Diffraction-limited spot localization, measurement of distances, co-localization studies, signal-starved features, advanced processing; cell and single particle tracking, dynamic expression level quantification	All of the above + Fluoresent Protein (FP) labelling, Single Molecule (SM) FISH, CasFISH, SM Proximity Ligation Assay (PLA), dCas9-based labelling	required monthly	highly-recommended quarterly to monthly		- imaging temperature, air pressure, humidity and CO2 percentage - mounting medium measured refractive index - high precision coverglass	detailed microscope table, light source and light source coupling, magnification, focusing and autofocus, light path, filter, dichroic, additional optics and detector specification & settings	- acquisition time settings - sample positioning settings - objective temperature - measured immersion medium refractive index
	3	Manufacturing/ Full Documentation/ Technical Development	Full reproducibility of microscopic set-up and image acquisition	Development of novel unproved technology or of new gold-standard; full reproducibility of microscopy set up and image acquisition settings	all of the above	required for every acquisition	required quarterly to monthly		all the metadata specified by the data model - including any novel technology-specific metrics		