



COLOUR - DATASETS

Colour - Datasets Documentation

Release 0.2.0

Colour Developers

Feb 27, 2022

CONTENTS

1	1.1	Features	3
	1.1	1.1.1 Examples	3
2	1.2	User Guide	5
	2.1	User Guide	5
3	1.3	API Reference	7
	3.1	API Reference	7
4	1.4	Code of Conduct	47
5	1.5	Contact & Social	49
6	1.6	About	51
		Bibliography	53
		Index	55

Colour science datasets for use with [Colour](#) or any Python package manipulating colours. The datasets are hosted in [Zenodo](#) under the [Colour Science - Datasets](#) community.

It is open source and freely available under the [New BSD License](#) terms.

1.1 FEATURES

Colour - Datasets was created to overcome issues encountered frequently when trying to access or use colour science datasets:

- No straightforward ingestion path for dataset content.
- No simple loading mechanism for dataset content.
- Unavailability of the dataset, e.g. download url is down, dataset content is passed directly from hand to hand.
- No information regarding the definitive origination of the dataset.

Colour - Datasets offers all the above: it allows users to ingest and load colour science datasets with a single function call. The datasets information is hosted on [Zenodo](#) where the record for a dataset typically contain:

- An *urls.txt* file describing the urls to source the dataset files from.
- A copy of those files in the eventuality where the source files are not available or the content has changed without notice.
- Information about the authors, content and licensing.

When no explicit licensing information is available, the dataset adopts the **Other (Not Open)** licensing scheme, implying that assessing usage conditions is at the sole discretion of the users.

1.1.1.1 Examples

Colour - Datasets can also be used online with [Google Colab](#).

Most of the objects are available from the `colour_datasets` namespace:

```
>>> import colour_datasets
```

The available datasets are listed with the `colour_datasets.datasets()` definition:

```
>>> print(colour_datasets.datasets())
```

```
colour-science-datasets
=====

Datasets : 21
Synced   : 1
URL      : https://zenodo.org/communities/colour-science-datasets/

Datasets
-----
```

(continues on next page)

(continued from previous page)

```
[ ] 3269926 : Agfa IT8.7/2 Set - Marszalec (n.d.)
[ ] 3245883 : Camera Spectral Sensitivity Database - Jiang et al. (2013)
[ ] 3367463 : Constant Hue Loci Data - Hung and Berns (1995)
[ ] 3362536 : Constant Perceived-Hue Data - Ebner and Fairchild (1998)
[ ] 3270903 : Corresponding-Colour Datasets - Luo and Rhodes (1999)
[ ] 3269920 : Forest Colors - Jaaskelainen et al. (1994)
[ ] 4394536 : LUTCHI Colour Appearance Data - Luo and Rhodes (1997)
[x] 3245875 : Labsphere SRS-99-020 - Labsphere (2019)
[ ] 3269924 : Lumber Spectra - Hiltunen (n.d.)
[ ] 4051012 : Measured Commercial LED Spectra - Brendel (2020)
[ ] 3269918 : Munsell Colors Glossy (All) (Spectrofotometer Measured) - Orava (n.d.)
[ ] 3269916 : Munsell Colors Glossy (Spectrofotometer Measured) - Haanpalo (n.d.)
[ ] 3269914 : Munsell Colors Matt (AOTF Measured) - Hauta-Kasari (n.d.)
[ ] 3269912 : Munsell Colors Matt (Spectrofotometer Measured) - Hauta-Kasari (n.d.)
[ ] 3245895 : New Color Specifications for ColorChecker SG and Classic Charts - X-Rite,
↳ (2016)
[ ] 3252742 : Observer Function Database - Asano (2015)
[ ] 3269922 : Paper Spectra - Haanpalo (n.d.)
[ ] 3372171 : RAW to ACES Utility Data - Dyer et al. (2017)
[ ] 4642271 : Spectral Database of Commonly Used Cine Lighting - Karge et al. (2015)
[ ] 4297288 : Spectral Sensitivity Database - Zhao et al. (2009)
[ ] 4050598 : Spectral Upsampling Coefficient Tables - Jakob and Hanika. (2019)
```

A ticked checkbox means that the particular dataset has been synced locally. A dataset is loaded by using its unique number: 3245895:

```
>>> print(colour_datasets.load('3245895').keys())
```

```
Pulling "New Color Specifications for ColorChecker SG and Classic Charts" record content..
↳.
Downloading "urls.txt" file: 8.19kB [00:01, 5.05kB/s]
Downloading "ColorChecker24_After_Nov2014.zip" file: 8.19kB [00:01, 6.52kB/s]
Downloading "ColorChecker24_Before_Nov2014.zip" file: 8.19kB [00:01, 7.66kB/s]
Downloading "ColorCheckerSG_After_Nov2014.zip" file: 8.19kB [00:01, 7.62kB/s]
Downloading "ColorCheckerSG_Before_Nov2014.zip" file: 8.19kB [00:00, 9.39kB/s]
Unpacking "/Users/kelsolaar/.colour-science/colour-datasets/3245895/dataset/
↳ColorCheckerSG_Before_Nov2014.zip" archive...
Unpacking "/Users/kelsolaar/.colour-science/colour-datasets/3245895/dataset/
↳ColorCheckerSG_After_Nov2014.zip" archive...
Unpacking "/Users/kelsolaar/.colour-science/colour-datasets/3245895/dataset/
↳ColorChecker24_After_Nov2014.zip" archive...
Unpacking "/Users/kelsolaar/.colour-science/colour-datasets/3245895/dataset/
↳ColorChecker24_Before_Nov2014.zip" archive...
odict_keys(['ColorChecker24 - After November 2014', 'ColorChecker24 - Before November 2014',
↳, 'ColorCheckerSG - After November 2014', 'ColorCheckerSG - Before November 2014'])
```

Alternatively, a dataset can be loaded by using its full title: *New Color Specifications for ColorChecker SG and Classic Charts - X-Rite (2016)*

```
>>> print(colour_datasets.load('3245895').keys())
odict_keys(['ColorChecker24 - After November 2014', 'ColorChecker24 - Before November 2014',
↳, 'ColorCheckerSG - After November 2014', 'ColorCheckerSG - Before November 2014'])
```


1.2 USER GUIDE

2.1 User Guide

The user guide provides an overview of **Colour - Datasets** and explains important concepts and features, details can be found in the [API Reference](#).

2.1.1 Installation Guide

Primary Dependencies

Colour - Datasets requires various dependencies in order to run:

- `python >= 3.8, < 4`
- `cachetools`
- `colour-science >= 4`
- `imageio >= 2, < 3`
- `numpy >= 1.19, < 2`
- `scipy >= 1.5, < 2`
- `tqdm`
- `xlrd`

Pypi

Once the dependencies are satisfied, **Colour - Datasets** can be installed from the [Python Package Index](#) by issuing this command in a shell:

```
pip install --user colour-datasets
```

The overall development dependencies are installed as follows:

```
pip install --user 'colour-datasets[development]'
```

2.1.2 Bibliography

Indirect References

Some extra references used in the codebase but not directly part of the public api:

- [[Openpyxl](#)Developers19]

1.3 API REFERENCE

3.1 API Reference

3.1.1 Colour - Datasets

Datasets & Dataset Loading

Loading a Dataset

colour_datasets

<code>load(dataset)</code>	Load given dataset: The dataset is pulled locally, i.e. synced if required and then its data is loaded.
----------------------------	---

`colour_datasets.load`

`colour_datasets.load(dataset: Union[Integer, str]) → Any`

Load given dataset: The dataset is pulled locally, i.e. synced if required and then its data is loaded.

Parameters `dataset` (Union[Integer, str]) – Dataset id, i.e. the *Zenodo* record number or title.

Returns Dataset data.

Return type `object`

Examples

```
>>> len(load('3245883').keys())
28
>>> len(load(
...     'Camera Spectral Sensitivity Database - '
...     'Jiang et al. (2013)').keys())
...
28
```

Ancillary Objects

`colour_datasets.loaders`

<code>DATASET_LOADERS</code>	Dataset loaders ids and callables.
------------------------------	------------------------------------

colour_datasets.loaders.DATASET_LOADERS

```
colour_datasets.loaders.DATASET_LOADERS:
colour.utilities.data_structures.CaseInsensitiveMapping =
CaseInsensitiveMapping({'3252742': ..., '4051012': ..., '3372171': ..., '3362536': ...,
'3367463': ..., '4050598': ..., '3245883': ..., '4642271': ..., '3245875': ..., '4394536':
..., '3270903': ..., '3245895': ..., '4297288': ..., '3269912': ..., '3269914': ...,
'3269916': ..., '3269918': ..., '3269920': ..., '3269922': ..., '3269924': ..., '3269926':
...})
```

Dataset loaders ids and callables.

<code>AbstractDatasetLoader(record)</code>	Define the base class for a dataset loader.
--	---

colour_datasets.loaders.AbstractDatasetLoader

```
class colour_datasets.loaders.AbstractDatasetLoader(record:
                                                    colour_datasets.records.zenodo.Record)
```

Bases: `abc.ABC`

Define the base class for a dataset loader.

This is an `ABCMeta` abstract class that must be inherited by sub-classes.

The sub-classes are expected to implement the `colour_datasets.loaders.AbstractDatasetLoader.load()` method that handles the syncing, parsing, conversion and return of the dataset content as a *Python* object.

Attributes

- `colour_datasets.loaders.AbstractDatasetLoader.ID`
- `colour_datasets.loaders.AbstractDatasetLoader.record`
- `colour_datasets.loaders.AbstractDatasetLoader.id`
- `colour_datasets.loaders.AbstractDatasetLoader.content`

Methods

- `colour_datasets.loaders.AbstractDatasetLoader.__init__()`
- `colour_datasets.loaders.AbstractDatasetLoader.load()`
- `colour_datasets.loaders.AbstractDatasetLoader.sync()`

Parameters `record` (`Record`) – Dataset record.

ID: `str = 'Undefined'`

Dataset record id, i.e. the *Zenodo* record number.

property record: `colour_datasets.records.zenodo.Record`

Getter property for the dataset record.

Returns Dataset record.

Return type `colour_datasets.Record`

property id: `str`

Getter property for the dataset id.

Returns Dataset id.

Return type `str`

property content: `Any`

Getter property for the dataset content.

Returns Dataset content.

Return type `object`

abstract load() → `Any`

Sync, parse, convert and return the dataset content as a *Python* object.

Returns Dataset content as a *Python* object.

Return type `object`

Notes

- Sub-classes are required to call `colour_datasets.loaders.AbstractDatasetLoader.sync()` method when they implement it, e.g. `super().sync()`.

sync()

Sync the dataset content, i.e. checks whether it is synced and pulls it if required.

Datasets

`colour_datasets.loaders`

Spectral Upsampling Coefficient Tables - Jakob and Hanika (2019)

`DatasetLoader_Jakob2019()`

Define the *Jakob and Hanika (2019) Spectral Upsampling Coefficient Tables* dataset loader.

`colour_datasets.loaders.DatasetLoader_Jakob2019`

class `colour_datasets.loaders.DatasetLoader_Jakob2019`

Bases: `colour_datasets.loaders.abstract.AbstractDatasetLoader`

Define the *Jakob and Hanika (2019) Spectral Upsampling Coefficient Tables* dataset loader.

Attributes

- `colour_datasets.loaders.DatasetLoader_Jakob2019.ID`

Methods

- `colour_datasets.loaders.DatasetLoader_Jakob2019.__init__()`
- `colour_datasets.loaders.DatasetLoader_Jakob2019.load()`

References

[JH19]

ID: `str = '4050598'`

Dataset record id, i.e. the *Zenodo* record number.

load() → `Dict[str, colour.recovery.jakob2019.LUT3D_Jakob2019]`

Sync, parse, convert and return the *Jakob and Hanika (2019) Spectral Upsampling Coefficient Tables* dataset content.

Returns *Jakob and Hanika (2019) Spectral Upsampling Coefficient Tables* dataset content.

Return type `dict`

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> dataset = DatasetLoader_Jakob2019()
>>> with suppress_stdout():
...     dataset.load()
>>> len(dataset.content.keys())
4
```

`build_Jakob2019([load])`

Singleton factory that builds the *Jakob and Hanika (2019) Spectral Upsampling Coefficient Tables* dataset loader.

`colour_datasets.loaders.build_Jakob2019`

`colour_datasets.loaders.build_Jakob2019(load: bool = True) →`

`colour_datasets.loaders.jakob2019.DatasetLoader_Jakob2019`

Singleton factory that builds the *Jakob and Hanika (2019) Spectral Upsampling Coefficient Tables* dataset loader.

Parameters `load (bool)` – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *Jakob and Hanika (2019) Spectral Upsampling Coefficient Tables* dataset loader.

Return type `colour_datasets.loaders.DatasetLoader_Jakob2019`

References

[JH19]

Agfa IT8.7/2 Set - Marszalec (n.d.)

<code>DatasetLoader_AgfaIT872Set()</code>	Defines the <i>University of Kuopio Agfa IT8.7/2 Set</i> dataset loader.
---	--

`colour_datasets.loaders.DatasetLoader_AgfaIT872Set`

class `colour_datasets.loaders.DatasetLoader_AgfaIT872Set`

Bases: `colour_datasets.loaders.kuopio.DatasetLoader_KuopioUniversity`

Defines the *University of Kuopio Agfa IT8.7/2 Set* dataset loader.

Attributes

- `colour_datasets.loaders.Agfa IT8.7/2 Set.ID`
- `colour_datasets.loaders.Agfa IT8.7/2 Set.METADATA`

Methods

- `colour_datasets.loaders.Agfa IT8.7/2 Set.__init__()`
- `colour_datasets.loaders.Agfa IT8.7/2 Set.load()`

References

[MUniversityoKuopio]

<code>build_AgfaIT872Set([load])</code>	Singleton factory that the builds <i>University of Kuopio Agfa IT8.7/2 Set</i> dataset loader.
---	--

`colour_datasets.loaders.build_AgfaIT872Set`

`colour_datasets.loaders.build_AgfaIT872Set(load: Boolean = True) →`

`DatasetLoader_KuopioUniversity`

Singleton factory that the builds *University of Kuopio Agfa IT8.7/2 Set* dataset loader.

Parameters `load` (Boolean) – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *University of Kuopio Agfa IT8.7/2 Set* dataset loader.

Return type `DatasetLoader_AgfaIT872Set`

References

[MUniversityoKuopio]

Camera Spectral Sensitivity Database - Jiang et al. (2013)

<code>DatasetLoader_Jiang2013()</code>	Define the <i>Jiang et al. (2013) Camera Spectral Sensitivity Database</i> dataset loader.
--	--

`colour_datasets.loaders.DatasetLoader_Jiang2013`

class `colour_datasets.loaders.DatasetLoader_Jiang2013`

Bases: `colour_datasets.loaders.abstract.AbstractDatasetLoader`

Define the *Jiang et al. (2013) Camera Spectral Sensitivity Database* dataset loader.

Attributes

- `colour_datasets.loaders.DatasetLoader_Jiang2013.ID`

Methods

- `colour_datasets.loaders.DatasetLoader_Jiang2013.__init__()`
- `colour_datasets.loaders.DatasetLoader_Jiang2013.load()`

References

[JLGS13]

ID: `str = '3245883'`

Dataset record id, i.e. the *Zenodo* record number.

load() → `Dict[str, colour.characterisation.cameras.RGB_CameraSensitivities]`

Sync, parse, convert and return the *Jiang et al. (2013) Camera Spectral Sensitivity Database* dataset content.

Returns *Jiang et al. (2013) Camera Spectral Sensitivity Database* dataset content.

Return type `dict`

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> dataset = DatasetLoader_Jiang2013()
>>> with suppress_stdout():
...     dataset.load()
>>> len(dataset.content.keys())
28
```

<code>build_Jiang2013([load])</code>	Singleton factory that builds the <i>Jiang et al. (2013) Camera Spectral Sensitivity Database</i> dataset loader.
--------------------------------------	---

colour_datasets.loaders.build_Jiang2013

`colour_datasets.loaders.build_Jiang2013(load: bool = True) → colour_datasets.loaders.jiang2013.DatasetLoader_Jiang2013`
 Singleton factory that builds the *Jiang et al. (2013) Camera Spectral Sensitivity Database* dataset loader.

Parameters `load` (bool) – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *Jiang et al. (2013) Camera Spectral Sensitivity Database* dataset loader.

Return type `colour_datasets.loaders.DatasetLoader_Jiang2013`

References

[JLGS13]

Constant Hue Loci Data - Hung and Berns (1995)

<code>DatasetLoader_Hung1995()</code>	Define the <i>Hung and Berns (1995) Constant Hue Loci Data</i> dataset loader.
---------------------------------------	--

colour_datasets.loaders.DatasetLoader_Hung1995

class `colour_datasets.loaders.DatasetLoader_Hung1995`

Bases: `colour_datasets.loaders.abstract.AbstractDatasetLoader`

Define the *Hung and Berns (1995) Constant Hue Loci Data* dataset loader.

Attributes

- `colour_datasets.loaders.DatasetLoader_Hung1995.ID`

Methods

- `colour_datasets.loaders.DatasetLoader_Hung1995.__init__()`
- `colour_datasets.loaders.DatasetLoader_Hung1995.load()`

References

[HB95]

ID: `str = '3367463'`

Dataset record id, i.e. the *Zenodo* record number.

load() → `Dict[str, Dict[str, colour_datasets.loaders.hung1995.ConstantPerceivedHueColourMatches_Hung1995]]`
 Sync, parse, convert and return the *Hung and Berns (1995) Constant Hue Loci Data* dataset content.

Returns *Hung and Berns (1995) Constant Hue Loci Data* dataset content.

Return type `dict`

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> dataset = DatasetLoader_Hung1995()
>>> with suppress_stdout():
...     dataset.load()
>>> len(dataset.content.keys())
6
```

<code>build_Hung1995([load])</code>	Singleton factory that builds the <i>Hung and Berns (1995) Constant Hue Loci Data</i> dataset loader.
-------------------------------------	---

colour_datasets.loaders.build_Hung1995

colour_datasets.loaders.**build_Hung1995**(load: *bool* = *True*) → *colour_datasets.loaders.hung1995.DatasetLoader_Hung1995*

Singleton factory that builds the *Hung and Berns (1995) Constant Hue Loci Data* dataset loader.

Parameters **load** (*bool*) – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *Hung and Berns (1995) Constant Hue Loci Data* dataset loader.

Return type *colour_datasets.loaders.DatasetLoader_Hung1995*

References

[HB95]

Constant Perceived-Hue Data - Ebner and Fairchild (1998)

<code>DatasetLoader_Ebner1998()</code>	Define the <i>Ebner and Fairchild (1998) Constant Perceived-Hue Data</i> dataset loader.
--	--

colour_datasets.loaders.DatasetLoader_Ebner1998

class colour_datasets.loaders.**DatasetLoader_Ebner1998**

Bases: *colour_datasets.loaders.abstract.AbstractDatasetLoader*

Define the *Ebner and Fairchild (1998) Constant Perceived-Hue Data* dataset loader.

Attributes

- `colour_datasets.loaders.DatasetLoader_Ebner1998.ID`

Methods

- `colour_datasets.loaders.DatasetLoader_Ebner1998.__init__()`
- `colour_datasets.loaders.DatasetLoader_Ebner1998.load()`

References

[EF98]

ID: `str` = '3362536'

Dataset record id, i.e. the *Zenodo* record number.

load()

Sync, parse, convert and return the *Ebner and Fairchild (1998) Constant Perceived-Hue Data* dataset content.

Returns *Ebner and Fairchild (1998) Constant Perceived-Hue Data** dataset content.

Return type `dict`

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> dataset = DatasetLoader_Ebner1998()
>>> with suppress_stdout():
...     dataset.load()
>>> len(dataset.content.keys())
1
```

`build_Ebner1998([load])`

Singleton factory that builds the *Ebner and Fairchild (1998) Constant Perceived-Hue Data* dataset loader.

`colour_datasets.loaders.build_Ebner1998`

`colour_datasets.loaders.build_Ebner1998(load: bool = True)` →

`colour_datasets.loaders.ebner1998.DatasetLoader_Ebner1998`

Singleton factory that builds the *Ebner and Fairchild (1998) Constant Perceived-Hue Data* dataset loader.

Parameters `load` (`bool`) – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *Ebner and Fairchild (1998) Constant Perceived-Hue Data* dataset loader.

Return type `colour_datasets.loaders.DatasetLoader_Ebner1998`

References

[EF98]

Corresponding-Colour Datasets - Luo and Rhodes (1999)

<code>DatasetLoader_Luo1999()</code>	Define the <i>Luo and Rhodes (1999) Corresponding-Colour Datasets</i> dataset loader.
--------------------------------------	---

`colour_datasets.loaders.DatasetLoader_Luo1999`

class `colour_datasets.loaders.DatasetLoader_Luo1999`

Bases: `colour_datasets.loaders.abstract.AbstractDatasetLoader`

Define the *Luo and Rhodes (1999) Corresponding-Colour Datasets* dataset loader.

Attributes

- `colour_datasets.loaders.DatasetLoader_Luo1999.ID`

Methods

- `colour_datasets.loaders.DatasetLoader_Luo1999.__init__()`
- `colour_datasets.loaders.DatasetLoader_Luo1999.load()`

References

[Bre87], [LR99], [MMT76]

ID: `str = '3270903'`

Dataset record id, i.e. the *Zenodo* record number.

load() → `Dict[str, colour_datasets.loaders.luo1999.CorrespondingColourDataset_Luo1999]`

Sync, parse, convert and return the *Luo and Rhodes (1999) Corresponding-Colour Datasets* dataset content.

Returns *Luo and Rhodes (1999) Corresponding-Colour Datasets* dataset content.

Return type `dict`

Notes

- *Brene.p6.dat* has only 11 samples while *Breneman (1987)* has 12 results.
- The illuminance in *Lux* for *Breneman (1987)* datasets given by *Luo and Rhodes (1999)* is in domain [50, 3870] while *Breneman (1987)* reports luminance in cd/m^2 in domain [15, 11100], i.e. [47, 34871.69] in *Lux*. The metadata has been corrected accordingly.
- The illuminance values, i.e. 14 and 40, for *McCann, McKee and Taylor (1976)* datasets given by *Luo and Rhodes (1999)* were not found in [MMT76]. The values in use are the average of both.

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> dataset = DatasetLoader_Luo1999()
>>> with suppress_stdout():
...     dataset.load()
>>> len(dataset.content.keys())
37
```

<code>build_Luo1999([load])</code>	Singleton factory that the builds <i>Luo and Rhodes (1999) Corresponding-Colour Datasets</i> dataset loader.
------------------------------------	--

colour_datasets.loaders.build_Luo1999

colour_datasets.loaders.**build_Luo1999**(load: *bool* = *True*) → *colour_datasets.loaders.luo1999.DatasetLoader_Luo1999*
 Singleton factory that the builds *Luo and Rhodes (1999) Corresponding-Colour Datasets* dataset loader.

Parameters **load** (*bool*) – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *Luo and Rhodes (1999) Corresponding-Colour Datasets* dataset loader.

Return type *colour_datasets.loaders.DatasetLoader_Luo1999*

References

[Bre87], [LR99], [MMT76]

Forest Colors - Jaaskelainen et al. (1994)

<code>DatasetLoader_ForestColors()</code>	Defines the <i>University of Kuopio Forest Colors</i> dataset loader.
---	---

colour_datasets.loaders.DatasetLoader_ForestColors

class colour_datasets.loaders.**DatasetLoader_ForestColors**
 Bases: colour_datasets.loaders.kuopio.DatasetLoader_KuopioUniversity
 Defines the *University of Kuopio Forest Colors* dataset loader.

Attributes

- `colour_datasets.loaders.Forest Colors.ID`
- `colour_datasets.loaders.Forest Colors.METADATA`

Methods

- `colour_datasets.loaders.Forest Colors.__init__()`
- `colour_datasets.loaders.Forest Colors.load()`

References

[[SUniversityoKuopio](#)]

<code>build_ForestColors([load])</code>	Singleton factory that the builds <i>University of Kuopio Forest Colors</i> dataset loader.
---	---

`colour_datasets.loaders.build_ForestColors`

`colour_datasets.loaders.build_ForestColors(load: Boolean = True) → DatasetLoader_KuopioUniversity`
 Singleton factory that the builds *University of Kuopio Forest Colors* dataset loader.

Parameters `load` (Boolean) – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *University of Kuopio Forest Colors* dataset loader.

Return type `DatasetLoader_ForestColors`

References

[[SUniversityoKuopio](#)]

LUTCHI Colour Appearance Data - Luo and Rhodes (1997)

<code>DatasetLoader_Luo1997()</code>	Define the <i>Luo and Rhodes (1997) LUTCHI Colour Appearance Data</i> dataset loader.
--------------------------------------	---

`colour_datasets.loaders.DatasetLoader_Luo1997`

class `colour_datasets.loaders.DatasetLoader_Luo1997`

Bases: `colour_datasets.loaders.abstract.AbstractDatasetLoader`

Define the *Luo and Rhodes (1997) LUTCHI Colour Appearance Data* dataset loader.

Attributes

- `colour_datasets.loaders.DatasetLoader_Luo1997.ID`

Methods

- `colour_datasets.loaders.DatasetLoader_Luo1997.__init__()`
- `colour_datasets.loaders.DatasetLoader_Luo1997.load()`

References

[LCR+91a], [LCR+91b], [LGR+93], [LR97]

ID: `str = '4394536'`

Dataset record id, i.e. the *Zenodo* record number.

load() → `Dict[str, colour_datasets.loaders.luo1997.ExperimentalGroupLuo1997]`

Sync, parse, convert and return the *Luo and Rhodes (1997) LUTCHI Colour Appearance Data* dataset content.

Returns *Luo and Rhodes (1997) LUTCHI Colour Appearance Data* dataset content.

Return type `dict`

Notes

- The *cold65wnl* file located at the following url: <https://web.archive.org/web/20031230164218/http://colour.derby.ac.uk/colour/info/lutchi/data/cold65wnl> is empty. Mark Fairchild's archive located at the following url: http://www.rit-mcsl.org/fairchild/files/LUTCHI_Data.sit also contains an empty *cold65wnl* file. A single line break has been added to the original file so that it can be uploaded to *Zenodo*.
- The *BIT.p*.** files are effectively named **bit_p*.**.
- The *cola.l* file does not exist and is assumed to be named *colal.l*.
- The *Self-luminous* entry for *Table I: Summary of the experimental groups* is named *CRT* in the sub-sequent tables.
- The *mean4.p** and *col.rf.p** files should all have 40 samples, unexpectedly all the *col.rf.p** files have 41 samples. The first data rows are used as they are better correlated between the two datasets. The last row could be the experimental whitepoint.
- The *mean4.p7*, *mean4.p8*, *mean4.p9*, *mean4.p10*, *mean4.p11*, and *mean4.p12* files represent brightness experimental results.
- The *bit_p3.vis* file has 5 columns instead of 4 only the last 3 are accounted for.

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> dataset = DatasetLoader_Luo1997()
>>> with suppress_stdout():
...     dataset.load()
>>> len(dataset.content.keys())
8
```

<code>build_Luo1997([load])</code>	Singleton factory that the builds <i>Luo and Rhodes (1997) LUTCHI Colour Appearance Data</i> dataset loader.
------------------------------------	--

colour_datasets.loaders.build_Luo1997

`colour_datasets.loaders.build_Luo1997(load: bool = True) → colour_datasets.loaders.luo1997.DatasetLoader_Luo1997`
 Singleton factory that the builds *Luo and Rhodes (1997) LUTCHI Colour Appearance Data* dataset loader.

Parameters `load` (bool) – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *Luo and Rhodes (1997) LUTCHI Colour Appearance Data* dataset loader.

Return type `colour_datasets.loaders.DatasetLoader_Luo1997`

References

[LCR+91a], [LCR+91b], [LGR+93], [LR97]

Labsphere SRS-99-020 - Labsphere (2019)

<code>DatasetLoader_Labsphere2019()</code>	Define the <i>Labsphere (2019) Labsphere SRS-99-020</i> dataset loader.
--	---

colour_datasets.loaders.DatasetLoader_Labsphere2019

class `colour_datasets.loaders.DatasetLoader_Labsphere2019`
 Bases: `colour_datasets.loaders.abstract.AbstractDatasetLoader`
 Define the *Labsphere (2019) Labsphere SRS-99-020* dataset loader.

Attributes

- `colour_datasets.loaders.DatasetLoader_Labsphere2019.ID`

Methods

- `colour_datasets.loaders.DatasetLoader_Labsphere2019.__init__()`
- `colour_datasets.loaders.DatasetLoader_Labsphere2019.load()`

References

[Labsphere19]

ID: `str = '3245875'`

Dataset record id, i.e. the *Zenodo* record number.

load() → `Dict[str, colour.colorimetry.spectrum.SpectralDistribution]`

Sync, parse, convert and return the *Labsphere (2019) Labsphere SRS-99-020* dataset content.

Returns *Labsphere (2019) Labsphere SRS-99-020* dataset content.

Return type `dict`

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> dataset = DatasetLoader_Labsphere2019()
>>> with suppress_stdout():
...     dataset.load()
>>> len(dataset.content.keys())
1
```

`build_Labsphere2019([load])`

Singleton factory that builds the *Labsphere (2019) Labsphere SRS-99-020* dataset loader.

`colour_datasets.loaders.build_Labsphere2019`

`colour_datasets.loaders.build_Labsphere2019(load: bool = True) →`

`colour_datasets.loaders.labsphere2019.DatasetLoader_Labsphere2019`

Singleton factory that builds the *Labsphere (2019) Labsphere SRS-99-020* dataset loader.

Parameters `load` (*bool*) – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *Labsphere (2019) Labsphere SRS-99-020* dataset loader.

Return type `colour_datasets.loaders.DatasetLoader_Labsphere2019`

References

[Labsphere19]

Lumber Spectra - Hiltunen (n.d.)

`DatasetLoader_LumberSpectra()`

Defines the *University of Kuopio Lumber Spectra* dataset loader.

colour_datasets.loaders.DatasetLoader_LumberSpectra

class colour_datasets.loaders.DatasetLoader_LumberSpectra

Bases: colour_datasets.loaders.kuopio.DatasetLoader_KuopioUniversity

Defines the *University of Kuopio Lumber Spectra* dataset loader.

Attributes

- colour_datasets.loaders.Lumber Spectra.ID
- colour_datasets.loaders.Lumber Spectra.METADATA

Methods

- colour_datasets.loaders.Lumber Spectra.__init__()
- colour_datasets.loaders.Lumber Spectra.load()

References

[HUniversityoKuopioc]

<code>build_LumberSpectra([load])</code>	Singleton factory that the builds <i>University of Kuopio Lumber Spectra</i> dataset loader.
--	--

colour_datasets.loaders.build_LumberSpectra

colour_datasets.loaders.**build_LumberSpectra**(load: Boolean = True) →

DatasetLoader_KuopioUniversity

Singleton factory that the builds *University of Kuopio Lumber Spectra* dataset loader.

Parameters **load** (Boolean) – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *University of Kuopio Lumber Spectra* dataset loader.

Return type *DatasetLoader_LumberSpectra*

References

[HUniversityoKuopioc]

Measured Commercial LED Spectra - Brendel (2020)

<code>DatasetLoader_Brendel2020()</code>	Define the <i>Brendel (2020) Measured Commercial LED Spectra</i> dataset loader.
--	--

colour_datasets.loaders.DatasetLoader_Brendel2020

class colour_datasets.loaders.DatasetLoader_Brendel2020

Bases: colour_datasets.loaders.abstract.AbstractDatasetLoader

Define the *Brendel (2020) Measured Commercial LED Spectra* dataset loader.

Attributes

ID

Methods

load

References

[Bre20]

ID: `str = '4051012'`

Dataset record id, i.e. the *Zenodo* record number.

load() → `Dict[str, colour.colorimetry.spectrum.SpectralDistribution]`

Sync, parse, convert and return the *Brendel (2020) Measured Commercial LED Spectra* dataset content.

Returns *Brendel (2020) Measured Commercial LED Spectra* dataset content.

Return type `dict`

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> dataset = DatasetLoader_Brendel2020()
>>> with suppress_stdout():
...     dataset.load()
>>> len(dataset.content.keys())
29
```

`build_Brendel2020([load])`

Singleton factory that builds the *Brendel (2020) Measured Commercial LED Spectra* dataset loader.

colour_datasets.loaders.build_Brendel2020

colour_datasets.loaders.**build_Brendel2020**(load: `bool = True`) →

`colour_datasets.loaders.brendel2020.DatasetLoader_Brendel2020`

Singleton factory that builds the *Brendel (2020) Measured Commercial LED Spectra* dataset loader.

Parameters `load (bool)` – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *Brendel (2020) Measured Commercial LED Spectra* dataset loader.

Return type `colour_datasets.loaders.DatasetLoader_Brendel2020`

References

[Bre20]

Munsell Colors Glossy (All) (Spectrofotometer Measured) - Orava (n.d.)

`DatasetLoader_MunsellColorsGlossyAllSpectrofotometerMeasured` Defines the *University of Kuopio Munsell Colors Glossy (All) (Spectrofotometer Measured)* dataset loader.

colour_datasets.loaders.DatasetLoader_MunsellColorsGlossyAllSpectrofotometerMeasured

class colour_datasets.loaders.**DatasetLoader_MunsellColorsGlossyAllSpectrofotometerMeasured**
 Bases: colour_datasets.loaders.kuopio.DatasetLoader_KuopioUniversity

Defines the *University of Kuopio Munsell Colors Glossy (All) (Spectrofotometer Measured)* dataset loader.

Attributes

- colour_datasets.loaders.Munsell Colors Glossy (All) (Spectrofotometer Measured).ID
- colour_datasets.loaders.Munsell Colors Glossy (All) (Spectrofotometer Measured).METADATA

Methods

- colour_datasets.loaders.Munsell Colors Glossy (All) (Spectrofotometer Measured).__init__()
- colour_datasets.loaders.Munsell Colors Glossy (All) (Spectrofotometer Measured).load()

References

[OUniversityoKuopio]

`build_MunsellColorsGlossyAllSpectrofotometerMeasured` Singleton factory that the builds *University of Kuopio Munsell Colors Glossy (All) (Spectrofotometer Measured)* dataset loader.

colour_datasets.loaders.build_MunsellColorsGlossyAllSpectrofotometerMeasured

colour_datasets.loaders.**build_MunsellColorsGlossyAllSpectrofotometerMeasured**(load: Boolean = True) → DatasetLoader_KuopioUniversity
 Singleton factory that the builds *University of Kuopio Munsell Colors Glossy (All) (Spectrofotometer Measured)* dataset loader.

Parameters **load** (Boolean) – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *University of Kuopio Munsell Colors Glossy (All) (Spectrofotometer Measured)* dataset loader.

Return type *DatasetLoader_MunsellColorsGlossyAllSpectrofotometerMeasured*

References

[OUniversityoKuopio]

Munsell Colors Glossy (Spectrofotometer Measured) - Haanpalo (n.d.)

DatasetLoader_MunsellColorsGlossySpectrofotometerMeasured Defines the University of Kuopio Munsell Colors Glossy (Spectrofotometer Measured) dataset loader.

colour_datasets.loaders.DatasetLoader_MunsellColorsGlossySpectrofotometerMeasured

class colour_datasets.loaders.**DatasetLoader_MunsellColorsGlossySpectrofotometerMeasured**

Bases: colour_datasets.loaders.kuopio.DatasetLoader_KuopioUniversity

Defines the *University of Kuopio Munsell Colors Glossy (Spectrofotometer Measured)* dataset loader.

Attributes

- colour_datasets.loaders.Munsell Colors Glossy (Spectrofotometer Measured).ID
- colour_datasets.loaders.Munsell Colors Glossy (Spectrofotometer Measured).METADATA

Methods

- colour_datasets.loaders.Munsell Colors Glossy (Spectrofotometer Measured).__init__()
- colour_datasets.loaders.Munsell Colors Glossy (Spectrofotometer Measured).load()

References

[HUniversityoKuopioa]

build_MunsellColorsGlossySpectrofotometerMeasuredSingleton Singleton factory that the builds *University of Kuopio Munsell Colors Glossy (Spectrofotometer Measured)* dataset loader.

colour_datasets.loaders.build_MunsellColorsGlossySpectrofotometerMeasured

colour_datasets.loaders.**build_MunsellColorsGlossySpectrofotometerMeasured**(load:

Boolean = True) →

DatasetLoader_KuopioUniversity

Singleton factory that the builds *University of Kuopio Munsell Colors Glossy (Spectrofotometer Measured)* dataset loader.

Parameters *load* (Boolean) – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *University of Kuopio Munsell Colors Glossy (Spectrofotometer Measured)* dataset loader.

Return type *DatasetLoader_MunsellColorsGlossySpectrofotometerMeasured*

References

[HUniversityKuopioa]

Munsell Colors Matt (AOTF Measured) - Hauta-Kasari (n.d.)

`DatasetLoader_MunsellColorsMattAOTFMeasured()` Defines the *University of Kuopio Munsell Colors Matt (AOTF Measured)* dataset loader.

colour_datasets.loaders.DatasetLoader_MunsellColorsMattAOTFMeasured

class colour_datasets.loaders.**DatasetLoader_MunsellColorsMattAOTFMeasured**

Bases: colour_datasets.loaders.kuopio.DatasetLoader_KuopioUniversity

Defines the *University of Kuopio Munsell Colors Matt (AOTF Measured)* dataset loader.

Attributes

- colour_datasets.loaders.Munsell Colors Matt (AOTF Measured).ID
- colour_datasets.loaders.Munsell Colors Matt (AOTF Measured).METADATA

Methods

- colour_datasets.loaders.Munsell Colors Matt (AOTF Measured).__init__()
- colour_datasets.loaders.Munsell Colors Matt (AOTF Measured).load()

References

[HautaKasariUniversityKuopioa]

`build_MunsellColorsMattAOTFMeasured([load])` Singleton factory that the builds *University of Kuopio Munsell Colors Matt (AOTF Measured)* dataset loader.

colour_datasets.loaders.build_MunsellColorsMattAOTFMeasured

colour_datasets.loaders.**build_MunsellColorsMattAOTFMeasured**(*load: Boolean = True*) → *DatasetLoader_KuopioUniversity*

Singleton factory that the builds *University of Kuopio Munsell Colors Matt (AOTF Measured)* dataset loader.

Parameters *load* (Boolean) – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *University of Kuopio Munsell Colors Matt (AOTF Measured)* dataset loader.

Return type *DatasetLoader_MunsellColorsMattAOTFMeasured*

References

[HautaKasariUniversityoKuopioa]

Munsell Colors Matt (Spectrofotometer Measured) - Hauta-Kasari (n.d.)

`DatasetLoader_MunsellColorsMattSpectrofotometerMeasured` Defines the *University of Kuopio Munsell Colors Matt (Spectrofotometer Measured)* dataset loader.

`colour_datasets.loaders.DatasetLoader_MunsellColorsMattSpectrofotometerMeasured`

class `colour_datasets.loaders.DatasetLoader_MunsellColorsMattSpectrofotometerMeasured`

Bases: `colour_datasets.loaders.kuopio.DatasetLoader_KuopioUniversity`

Defines the *University of Kuopio Munsell Colors Matt (Spectrofotometer Measured)* dataset loader.

Attributes

- `colour_datasets.loaders.Munsell Colors Matt (Spectrofotometer Measured).ID`
- `colour_datasets.loaders.Munsell Colors Matt (Spectrofotometer Measured).METADATA`

Methods

- `colour_datasets.loaders.Munsell Colors Matt (Spectrofotometer Measured).__init__()`
- `colour_datasets.loaders.Munsell Colors Matt (Spectrofotometer Measured).load()`

References

[HautaKasariUniversityoKuopioa]

`build_MunsellColorsMattSpectrofotometerMeasured` (Singleton) factory that the builds *University of Kuopio Munsell Colors Matt (Spectrofotometer Measured)* dataset loader.

`colour_datasets.loaders.build_MunsellColorsMattSpectrofotometerMeasured`

`colour_datasets.loaders.build_MunsellColorsMattSpectrofotometerMeasured`(*load*: Boolean = True) → `DatasetLoader_KuopioUniversity`

Singleton factory that the builds *University of Kuopio Munsell Colors Matt (Spectrofotometer Measured)* dataset loader.

Parameters *load* (Boolean) – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *University of Kuopio Munsell Colors Matt (Spectrofotometer Measured)* dataset loader.

Return type `DatasetLoader_MunsellColorsMattSpectrofotometerMeasured`

References

[HautaKasariUniversityoKuopiob]

New Color Specifications for ColorChecker SG and Classic Charts - X-Rite (2016)

<code>DatasetLoader_XRite2016()</code>	Define the <i>X-Rite (2016) New Color Specifications for ColorChecker SG and Classic Charts</i> dataset loader.
--	---

`colour_datasets.loaders.DatasetLoader_XRite2016`

class `colour_datasets.loaders.DatasetLoader_XRite2016`

Bases: `colour_datasets.loaders.abstract.AbstractDatasetLoader`

Define the *X-Rite (2016) New Color Specifications for ColorChecker SG and Classic Charts* dataset loader.

Attributes

- `colour_datasets.loaders.DatasetLoader_XRite2016.ID`

Methods

- `colour_datasets.loaders.DatasetLoader_XRite2016.__init__()`
- `colour_datasets.loaders.DatasetLoader_XRite2016.load()`

References

[XRite16]

ID: `str = '3245895'`

Dataset record id, i.e. the *Zenodo* record number.

load() → `Dict[str, colour.characterisation.datasets.colour_checkers.chromaticity_coordinates.ColourChecker]`
Sync, parse, convert and return the *X-Rite (2016) New Color Specifications for ColorChecker SG and Classic Charts* dataset content.

Returns *X-Rite (2016) New Color Specifications for ColorChecker SG and Classic Charts* dataset content.

Return type `dict`

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> dataset = DatasetLoader_XRite2016()
>>> with suppress_stdout():
...     dataset.load()
>>> len(dataset.content.keys())
4
```

<code>build_XRite2016([load])</code>	Singleton factory that the builds <i>X-Rite (2016) New Color Specifications for ColorChecker SG and Classic Charts</i> dataset loader.
--------------------------------------	--

colour_datasets.loaders.build_XRite2016

colour_datasets.loaders.**build_XRite2016**(load: *bool* = *True*) → *colour_datasets.loaders.xrите2016.DatasetLoader_XRite2016*

Singleton factory that the builds *X-Rite (2016) New Color Specifications for ColorChecker SG and Classic Charts* dataset loader.

Parameters `load` (*bool*) – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *X-Rite (2016) New Color Specifications for ColorChecker SG and Classic Charts* dataset loader.

Return type *colour_datasets.loaders.DatasetLoader_XRite2016*

References

[XRite16]

Observer Function Database - Asano (2015)

<code>DatasetLoader_Asano2015()</code>	Define the <i>Asano (2015) Observer Function Database</i> dataset loader.
--	---

colour_datasets.loaders.DatasetLoader_Asano2015

class colour_datasets.loaders.**DatasetLoader_Asano2015**

Bases: *colour_datasets.loaders.abstract.AbstractDatasetLoader*

Define the *Asano (2015) Observer Function Database* dataset loader.

Attributes

- `colour_datasets.loaders.DatasetLoader_Asano2015.ID`

Methods

- `colour_datasets.loaders.DatasetLoader_Asano2015.__init__()`
- `colour_datasets.loaders.DatasetLoader_Asano2015.load()`
- `colour_datasets.loaders.DatasetLoader_Asano2015.parse_workbook_Asano2015()`

References

[Asa15]

ID: `str = '3252742'`

Dataset record id, i.e. the *Zenodo* record number.

load() → `Dict[str, colour_datasets.loaders.asano2015.Specification_Asano2015]`

Sync, parse, convert and return the *Asano (2015) Observer Function Database* dataset content.

Returns *Asano (2015) Observer Function Database* dataset content.

Return type `dict`

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> dataset = DatasetLoader_Asano2015()
>>> with suppress_stdout():
...     dataset.load()
>>> len(dataset.content.keys())
2
```

static parse_workbook_Asano2015(*workbook: str, template: str, observers: Tuple = (1, 10)*) → `Dict[str, Dict]`

Parse given *Asano (2015) Observer Function Database* workbook.

Parameters

- **workbook** (`str`) – *Asano (2015) Observer Function Database* workbook path.
- **template** (`str`) – Template used to create the *CMFS* names.
- **observers** (`Tuple`) – Observers range.

Returns *Asano (2015) Observer Function Database* workbook observer data.

Return type `dict`

`build_Asano2015([load])`

Singleton factory that the builds *Asano (2015) Observer Function Database* dataset loader.

colour_datasets.loaders.build_Asano2015

colour_datasets.loaders.**build_Asano2015**(load: *bool* = *True*) → *colour_datasets.loaders.asano2015.DatasetLoader_Asano2015*

Singleton factory that the builds *Asano (2015) Observer Function Database* dataset loader.

Parameters **load** (*bool*) – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *Asano (2015) Observer Function Database* dataset loader.

Return type *colour_datasets.loaders.DatasetLoader_Asano2015*

References

[Asa15]

Paper Spectra - Haanpalo (n.d.)

<i>DatasetLoader_PaperSpectra</i> ()	Defines the <i>University of Kuopio Paper Spectra</i> dataset loader.
--------------------------------------	---

colour_datasets.loaders.DatasetLoader_PaperSpectra

class colour_datasets.loaders.**DatasetLoader_PaperSpectra**

Bases: colour_datasets.loaders.kuopio.DatasetLoader_KuopioUniversity

Defines the *University of Kuopio Paper Spectra* dataset loader.

Attributes

- colour_datasets.loaders.Paper Spectra.ID
- colour_datasets.loaders.Paper Spectra.METADATA

Methods

- colour_datasets.loaders.Paper Spectra.__init__()
- colour_datasets.loaders.Paper Spectra.load()

References

[HUniversityoKuopiob]

<i>build_PaperSpectra</i> ([load])	Singleton factory that the builds <i>University of Kuopio Paper Spectra</i> dataset loader.
------------------------------------	---

colour_datasets.loaders.build_PaperSpectra

`colour_datasets.loaders.build_PaperSpectra(load: Boolean = True) → DatasetLoader_KuopioUniversity`
 Singleton factory that the builds *University of Kuopio Paper Spectra* dataset loader.
Parameters `load` (Boolean) – Whether to load the dataset upon instantiation.
Returns Singleton instance of the *University of Kuopio Paper Spectra* dataset loader.
Return type `DatasetLoader_PaperSpectra`

References

[HUniversityoKuopio**b**]

RAW to ACES Utility Data - Dyer et al. (2017)

<code>DatasetLoader_Dyer2017()</code>	Define the <i>Dyer et al. (2017) RAW to ACES Utility Data</i> dataset loader.
---------------------------------------	---

colour_datasets.loaders.DatasetLoader_Dyer2017

class `colour_datasets.loaders.DatasetLoader_Dyer2017`
 Bases: `colour_datasets.loaders.abstract.AbstractDatasetLoader`
 Define the *Dyer et al. (2017) RAW to ACES Utility Data* dataset loader.

Attributes

- `colour_datasets.loaders.DatasetLoader_Dyer2017.ID`

Methods

- `colour_datasets.loaders.DatasetLoader_Dyer2017.__init__()`
- `colour_datasets.loaders.DatasetLoader_Dyer2017.load()`

References

[DFI+17]

ID: `str = '3372171'`
 Dataset record id, i.e. the *Zenodo* record number.

load() → `Dict[str, Dict[str, Union[colour_datasets.loaders.dyer2017.SpectralDistribution_AMPAS, colour_datasets.loaders.dyer2017.MultiSpectralDistributions_AMPAS]]]`
 Sync, parse, convert and return the *Dyer et al. (2017) RAW to ACES Utility Data* dataset content.

Returns *Dyer et al. (2017) RAW to ACES Utility Data* dataset content.

Return type `dict`

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> dataset = DatasetLoader_Dyer2017()
>>> with suppress_stdout():
...     dataset.load()
>>> len(dataset.content.keys())
4
```

<code>build_Dyer2017([load])</code>	Singleton factory that builds the <i>Dyer et al. (2017) RAW to ACES Utility Data</i> dataset loader.
-------------------------------------	--

colour_datasets.loaders.build_Dyer2017

colour_datasets.loaders.**build_Dyer2017**(load: *bool* = *True*) → *colour_datasets.loaders.dyer2017.DatasetLoader_Dyer2017*

Singleton factory that builds the *Dyer et al. (2017) RAW to ACES Utility Data* dataset loader.

Parameters `load` (*bool*) – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *Dyer et al. (2017) RAW to ACES Utility Data* dataset loader.

Return type *colour_datasets.loaders.DatasetLoader_Dyer2017*

References

[DFI+17]

Spectral Database of Commonly Used Cine Lighting - Karge et al. (2015)

<code>DatasetLoader_Zhao2009()</code>	Define the <i>Zhao et al. (2009) Spectral Sensitivity Database</i> dataset loader.
---------------------------------------	--

colour_datasets.loaders.DatasetLoader_Zhao2009

class colour_datasets.loaders.**DatasetLoader_Zhao2009**

Bases: *colour_datasets.loaders.abstract.AbstractDatasetLoader*

Define the *Zhao et al. (2009) Spectral Sensitivity Database* dataset loader.

Attributes

- `colour_datasets.loaders.DatasetLoader_Zhao2009.ID`

Methods

- `colour_datasets.loaders.DatasetLoader_Zhao2009.__init__()`
- `colour_datasets.loaders.DatasetLoader_Zhao2009.load()`

References

[ZKT109]

ID: `str` = '4297288'

Dataset record id, i.e. the *Zenodo* record number.

load() → `Dict[str, colour.characterisation.cameras.RGB_CameraSensitivities]`

Sync, parse, convert and return the *Zhao et al. (2009) Spectral Sensitivity Database* dataset content.

Returns *Zhao et al. (2009) Spectral Sensitivity Database* dataset content.

Return type `dict`

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> dataset = DatasetLoader_Zhao2009()
>>> with suppress_stdout():
...     dataset.load()
>>> len(dataset.content.keys())
12
```

`build_Zhao2009([load])`

Singleton factory that builds the *Zhao et al. (2009) Spectral Sensitivity Database* dataset loader.

`colour_datasets.loaders.build_Zhao2009`

`colour_datasets.loaders.build_Zhao2009(load: bool = True) →`

`colour_datasets.loaders.zhao2009.DatasetLoader_Zhao2009`

Singleton factory that builds the *Zhao et al. (2009) Spectral Sensitivity Database* dataset loader.

Parameters `load` (*bool*) – Whether to load the dataset upon instantiation.

Returns Singleton instance of the *Zhao et al. (2009) Spectral Sensitivity Database* dataset loader.

Return type `colour_datasets.loaders.DatasetLoader_Zhao2009`

References

[ZKTI09]

Spectral Sensitivity Database - Zhao et al. (2009)

<code>DatasetLoader_Zhao2009()</code>	Define the <i>Zhao et al. (2009) Spectral Sensitivity Database</i> dataset loader.
<code>build_Zhao2009([load])</code>	Singleton factory that builds the <i>Zhao et al. (2009) Spectral Sensitivity Database</i> dataset loader.

Zenodo Records & Community

Configuration

colour_datasets

<code>Configuration([configuration])</code>	<i>Colour - Datasets</i> configuration factory based on <code>colour.utilities.Structure</code> class and allowing to access key values using dot syntax.
---	---

colour_datasets.Configuration

class colour_datasets.**Configuration**(*configuration*: *Optional[Dict]* = None)

Bases: `colour.utilities.data_structures.Structure`

Colour - Datasets configuration factory based on `colour.utilities.Structure` class and allowing to access key values using dot syntax.

Parameters **configuration** (*Optional[Dict]*) – Configuration to use instead of the default one.

<code>sandbox([api_url, community])</code>	A context manager and decorator temporarily setting the configuration to the <i>Zenodo</i> sandbox.
--	---

colour_datasets.sandbox

class colour_datasets.**sandbox**(*api_url*: *str* = 'https://sandbox.zenodo.org/api', *community*: *str* = 'colour-science-datasets')

A context manager and decorator temporarily setting the configuration to the *Zenodo* sandbox.

Parameters

- **api_url** (*str*) – *Zenodo* sandbox url.
- **community** (*str*) – *Zenodo* community.

__init__(*api_url*: *str* = 'https://sandbox.zenodo.org/api', *community*: *str* = 'colour-science-datasets')

Parameters

- `api_url` (`str`) –
- `community` (`str`) –

Methods

```
__init__([api_url, community])
```

`colour_datasets.records`

<code>use_sandbox([state, api_url, community])</code>	Modify the <i>Colour - Datasets</i> configuration to use <i>Zenodo</i> sandbox.
---	---

`colour_datasets.records.use_sandbox`

```
colour_datasets.records.use_sandbox(state: bool = True, api_url: str =
                                     'https://sandbox.zenodo.org/api', community: str =
                                     'colour-science-datasets')
```

Modify the *Colour - Datasets* configuration to use *Zenodo* sandbox.

Parameters

- `state` (`bool`) – Whether to use *Zenodo* sandbox.
- `api_url` (`str`) – *Zenodo* sandbox url.
- `community` (`str`) – *Zenodo* community.

Record

`colour_datasets`

<code>Record(data[, configuration])</code>	Define an object storing a <i>Zenodo</i> record data and providing methods to sync it in a local repository.
--	--

`colour_datasets.Record`

```
class colour_datasets.Record(data: dict, configuration:
                              Optional[colour_datasets.records.configuration.Configuration] =
                              None)
```

Bases: `object`

Define an object storing a *Zenodo* record data and providing methods to sync it in a local repository.

Parameters

- `data` (`dict`) – *Zenodo* record data.
- `configuration` (`Optional[Configuration]`) – *Colour - Datasets* configuration.

Attributes

- `colour_datasets.Record.data`
- `colour_datasets.Record.configuration`
- `colour_datasets.Record.repository`
- `colour_datasets.Record.id`
- `colour_datasets.Record.title`

Methods

- `colour_datasets.Record.__init__()`
- `colour_datasets.Record.__str__()`
- `colour_datasets.Record.__repr__()`
- `colour_datasets.Record.from_id()`
- `colour_datasets.Record.synced()`
- `colour_datasets.Record.pull()`
- `colour_datasets.Record.remove()`

Examples

```
>>> record = Record(json_open('https://zenodo.org/api/records/3245883'))
```

```
# Doctests skip for Python 2.x compatibility. >>> record.id # doctest: +SKIP '3245883' >>>
record.title # doctest: +SKIP 'Camera Spectral Sensitivity Database - Jiang et al. (2013)'
```

property data: `dict`

Getter property for the *Zenodo* record data.

Returns *Zenodo* record data.

Return type `dict`

property configuration: `colour_datasets.records.configuration.Configuration`

Getter property for the *Colour - Datasets* configuration.

Returns *Colour - Datasets* configuration.

Return type `colour_datasets.Configuration`

property repository: `str`

Getter property for the *Zenodo* record local repository.

Returns *Zenodo* record local repository.

Return type `str`

property id: `str`

Getter property for the *Zenodo* record id.

Returns *Zenodo* record id.

Return type `str`

property title: `str`

Getter property for the *Zenodo* record title.

Returns *Zenodo* record title.

Return type `str`

```
static from_id(id_: str, configuration:
    Optional[colour_datasets.records.configuration.Configuration] = None, retries:
    int = 3) → colour_datasets.records.zenodo.Record
colour_datasets.Record class factory that builds an instance using given Zenodo record id.
```

Parameters

- **id** – Zenodo record id.
- **configuration** (Optional[colour_datasets.records.configuration.Configuration]) –
configuration Colour - Datasets configuration.
- **retries** (int) – Number of retries in case where a networking error occurs.
- **id_** (str) –

Returns Zenodo record data.

Return type colour_datasets.Record

Examples

```
# Doctests skip for Python 2.x compatibility. >>> Record.from_id('3245883').title ... #
doctest: +SKIP 'Camera Spectral Sensitivity Database - Jiang et al. (2013)'
```

synced() → bool

Return whether the Zenodo record data is synced to the local repository.

Returns Whether the Zenodo record data is synced to the local repository.

Return type bool

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> record = Record.from_id('3245883')
>>> with suppress_stdout():
...     record.pull()
>>> record.synced()
True
>>> record.remove()
>>> record.synced()
False
```

pull(use_urls_txt_file: bool = True, retries: int = 3)

Pull the Zenodo record data to the local repository.

Parameters

- **use_urls_txt_file** (bool) – Whether to use the *urls.txt* file: if such a file is present in the Zenodo record data, the urls it defines take precedence over the record data files. The later will be used in the eventuality where the urls are not available.
- **retries** (int) – Number of retries in case where a networking error occurs or the MD5 hash is not matching.

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> record = Record.from_id('3245883')
>>> record.remove()
>>> with suppress_stdout():
...     record.pull()
>>> record.synced()
True
```

remove()

Remove the *Zenodo* record data local repository.

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> record = Record.from_id('3245883')
>>> with suppress_stdout():
...     record.pull()
>>> record.remove()
>>> record.synced()
False
```

Community

colour_datasets

<code>Community(data[, configuration])</code>	Define an object storing a <i>Zenodo</i> community data.
---	--

colour_datasets.Community

class colour_datasets.**Community**(data: *Dict*, configuration: *Optional*[colour_datasets.records.configuration.Configuration] = *None*)

Bases: `collections.abc.Mapping`

Define an object storing a *Zenodo* community data.

Parameters

- **data** (*Dict*) – *Zenodo* community data.
- **configuration** (*Optional*[*Configuration*]) – *Colour - Datasets* configuration.

Attributes

- `colour_datasets.Community.data`
- `colour_datasets.Community.configuration`
- `colour_datasets.Community.repository`
- `colour_datasets.Community.records`

Methods

- `colour_datasets.Community.__init__()`
- `colour_datasets.Community.__str__()`
- `colour_datasets.Community.__repr__()`
- `colour_datasets.Community.__getitem__()`
- `colour_datasets.Community.__iter__()`
- `colour_datasets.Community.__len__()`
- `colour_datasets.Community.from_id()`
- `colour_datasets.Community.synced()`
- `colour_datasets.Community.pull()`
- `colour_datasets.Community.remove()`

Examples

```
>>> community_data = json_open(  
...     'https://zenodo.org/api/communities/colour-science-datasets')  
>>> records_data = json_open(  
...     'https://zenodo.org/api/records/?q=communities:'  
...     'colour-science-datasets')  
>>> community = Community({  
...     'community': community_data,  
...     'records': records_data,  
... })
```

```
# Doctests skip for Python 2.x compatibility. >>> community['3245883'].title # doctest: +SKIP  
'Camera Spectral Sensitivity Database - Jiang et al. (2013)'
```

property data: Dict

Getter property for the *Zenodo* community data.

Returns *Zenodo* community data.

Return type dict

property configuration: colour_datasets.records.configuration.Configuration

Getter property for the *Colour - Datasets* configuration.

Returns *Colour - Datasets* configuration.

Return type colour_datasets.Configuration

property repository: str

Getter property for the *Zenodo* community local repository.

Returns *Zenodo* community local repository.

Return type str

property records: Dict

Getter property for the *Zenodo* community records.

Returns *Zenodo* community records.

Return type dict

static from_id(id_: str, configuration:

Optional[colour_datasets.records.configuration.Configuration] = None, retries:

int = 3) → colour_datasets.records.zenodo.Community

colour_datasets.Community class factory that builds an instance using given *Zenodo* community id.

Parameters

- **id** – *Zenodo* community id.
- **configuration** (Optional[colour_datasets.records.configuration.Configuration]) –
configuration : Colour - Datasets configuration.
- **retries** (int) – Number of retries in case where a networking error occurs.
- **id_** (str) –

Returns *Zenodo* community data.

Return type colour_datasets.Community

Examples

```
>>> community = Community.from_id('colour-science-datasets-tests')
```

```
# Doctests skip for Python 2.x compatibility. >>> community['3245883'].title # doctest:
+SKIP 'Camera Spectral Sensitivity Database - Jiang et al. (2013)'
```

synced() → bool

Return whether the *Zenodo* community data is synced to the local repository.

Returns Whether the *Zenodo* community data is synced to the local repository.

Return type bool

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> community = Community.from_id('colour-science-datasets-tests')
>>> with suppress_stdout():
...     community.pull()
>>> community.synced()
True
>>> community.remove()
>>> community.synced()
False
```

pull(use_urls_txt_file: bool = True, retries: int = 3)

Pull the *Zenodo* community data to the local repository.

Parameters

- **use_urls_txt_file** (bool) – Whether to use the *urls.txt* file: if such a file is present in a *Zenodo* record data, the urls it defines take precedence over the

record data files. The later will be used in the eventuality where the urls are not available.

- **retries** (`int`) – Number of retries in case where a networking error occurs or the *MD5* hash is not matching.

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> community = Community.from_id('colour-science-datasets-tests')
>>> community.remove()
>>> with suppress_stdout():
...     community.pull()
>>> community.synced()
True
```

remove()

Remove the *Zenodo* community data local repository.

Examples

```
>>> from colour_datasets.utilities import suppress_stdout
>>> community = Community.from_id('colour-science-datasets-tests')
>>> with suppress_stdout():
...     community.pull()
>>> community.remove()
>>> community.synced()
False
```

<code>datasets()</code>	Singleton factory that returns <i>Zenodo</i> community that holds the datasets information.
-------------------------	---

`colour_datasets.datasets`

`colour_datasets.datasets()` → `colour_datasets.records.zenodo.Community`

Singleton factory that returns *Zenodo* community that holds the datasets information.

Returns Singleton instance of the *Zenodo* community.

Return type `colour_datasets.Community`

Examples

```
# Doctests skip for Python 2.x compatibility. >>> datasets()['3245883'].title # doctest: +SKIP
'Camera Spectral Sensitivity Database - Jiang et al. (2013)'
```

Utilities

Common

`colour_datasets.utilities`

<code>json_open(url[, retries])</code>	Open given url and return its content as <i>JSON</i> .
<code>hash_md5(filename[, chunk_size])</code>	Compute the <i>Message Digest 5 (MD5)</i> hash of given file.
<code>suppress_stdout()</code>	A context manager and decorator temporarily suppressing standard output.
<code>url_download(url, filename[, md5, retries])</code>	Download given url and saves its content at given file.

`colour_datasets.utilities.json_open`

`colour_datasets.utilities.json_open(url: str, retries: int = 3) → Dict`

Open given url and return its content as *JSON*.

Parameters

- **url** (*str*) – Url to open.
- **retries** (*int*) – Number of retries in case where a networking error occurs.

Returns *JSON* data.

Return type *dict*

Raises `urllib.error.URLError`, `ValueError` – If the url cannot be opened or parsed as *JSON*.

Notes

- The definition caches the request *JSON* output for 5 minutes.

Examples

```
# Doctests skip for Python 2.x compatibility. >>> json_open('https://zenodo.org/api/records/3245883') ... # doctest: +SKIP '{"conceptdoi": "10.5281/zenodo.3245882"'
```

colour_datasets.utilities.hash_md5

colour_datasets.utilities.hash_md5(filename: *str*, chunk_size: *int* = 2 ** 16) → *str*
 Compute the *Message Digest 5 (MD5)* hash of given file.

Parameters

- **filename** (*str*) – File to compute the *MD5* hash of.
- **chunk_size** (*int*) – Chunk size to read from the file.

Returns *MD5* hash of given file.

Return type *str*

colour_datasets.utilities.suppress_stdout

class colour_datasets.utilities.suppress_stdout

A context manager and decorator temporarily suppressing standard output.

`__init__()`

Methods

`__init__()`

colour_datasets.utilities.url_download

colour_datasets.utilities.url_download(url: *str*, filename: *str*, md5: *Optional[str]* = None, retries: *int* = 3)

Download given url and saves its content at given file.

Parameters

- **url** (*str*) – Url to download.
- **filename** (*str*) – File to save the url content at.
- **md5** (*Optional[str]*) – *Message Digest 5 (MD5)* hash of the content at given url. If provided the saved content at given file will be hashed and compared to md5.
- **retries** (*int*) – Number of retries in case where a networking error occurs or the *MD5* hash is not matching.

Examples

```
>>> import os
>>> url_download(
...     'https://github.com/colour-science/colour-datasets', os.devnull)
```


Spreadsheet

colour_datasets.utilities

<code>row_to_index(row)</code>	Return the 0-based index of given row name.
<code>index_to_row(index)</code>	Return the row name of given 0-based index.
<code>column_to_index(column)</code>	Return the 0-based index of given column letters.
<code>index_to_column(index)</code>	Return the column letters of given 0-based index.
<code>cell_range_values(sheet, cell_range)</code>	Return given workbook sheet cell range values, i.e. the values of the rows and columns for given cell range.

colour_datasets.utilities.row_to_index

colour_datasets.utilities.**row_to_index**(row: *Union[Integer, str]*) → Integer
Return the 0-based index of given row name.

Parameters row (*Union[Integer, str]*) – Row name.

Returns 0-based row index.

Return type class`int` or *str*

Examples

```
>>> row_to_index('1')
0
```

colour_datasets.utilities.index_to_row

colour_datasets.utilities.**index_to_row**(index: *int*) → *str*
Return the row name of given 0-based index.

Parameters index (*int*) – 0-based row index.

Returns Row name.

Return type class:`str`

Examples

```
# Doctests skip for Python 2.x compatibility. >>> index_to_row(0) # doctest: +SKIP '1'
```

colour_datasets.utilities.column_to_index

colour_datasets.utilities.**column_to_index**(column: *str*) → *int*
Return the 0-based index of given column letters.

Parameters column (*str*) – Column letters

Returns 0-based column index.

Return type *int*

Examples

```
>>> column_to_index('A')
0
```

colour_datasets.utilities.index_to_column

colour_datasets.utilities.**index_to_column**(index: *int*) → *str*

Return the column letters of given 0-based index.

Parameters **index** (*int*) – 0-based column index.

Returns Column letters

Return type *str*

Examples

```
# Doctests skip for Python 2.x compatibility. >>> index_to_column(0) # doctest: +SKIP 'A'
```

colour_datasets.utilities.cell_range_values

colour_datasets.utilities.**cell_range_values**(sheet: *xlrd.sheet.Sheet*, cell_range: *str*) → *List[str]*

Return given workbook sheet cell range values, i.e. the values of the rows and columns for given cell range.

Parameters

- **sheet** (*Sheet*) – Workbook sheet.
- **cell_range** (*str*) – Cell range values, e.g. “A1:C3”.

Returns List of row values.

Return type *list*

3.1.2 Indices and tables

- [genindex](#)
- [search](#)

1.4 CODE OF CONDUCT

The *Code of Conduct*, adapted from the [Contributor Covenant 1.4](#), is available on the [Code of Conduct](#) page.

1.5 CONTACT & SOCIAL

The *Colour Developers* can be reached via different means:

- [Email](#)
- [Facebook](#)
- [Github Discussions](#)
- [Gitter](#)
- [Twitter](#)

1.6 ABOUT

Colour - Datasets by Colour Developers

Copyright 2019 Colour Developers – colour-developers@colour-science.org

This software is released under terms of New BSD License:

<https://opensource.org/licenses/BSD-3-Clause>

<https://github.com/colour-science/colour-datasets>

BIBLIOGRAPHY

- [Asa15] Yuta Asano. *Individual Colorimetric Observers for Personalized Color Imaging*. PhD thesis, R.I.T., 2015.
- [Bre20] Harald Brendel. Measured commercial led spectra. April 2020. URL: https://haraldbrendel.com/files/led_spd_350_700.csv (visited on 2020-09-26).
- [Bre87] Edwin J. Breneman. Corresponding chromaticities for different states of adaptation to complex visual fields. *Journal of the Optical Society of America A*, 4(6):1115, June 1987. doi:10.1364/JOSAA.4.001115.
- [DFI+17] Scott Dyer, Alexander Forsythe, Jonathon Irons, Thomas Mansencal, and Miaoqi Zhu. Raw to aces utility data. 2017.
- [EF98] Fritz Ebner and Mark D. Fairchild. Finding constant hue surfaces in color space. In Giordano B. Beretta and Reiner Eschbach, editors, *Proc. SPIE 3300, Color Imaging: Device-Independent Color, Color Hardcopy, and Graphic Arts III, (2 January 1998)*, 107–117. January 1998. doi:10.1117/12.298269.
- [HUniversityKuopioa] Jouni Haanpalo and University of Kuopio. Munsell colors glossy (spectrofotometer measured). doi:10.5281/zenodo.3269916.
- [HUniversityKuopib] Jouni Haanpalo and University of Kuopio. Paper spectra. doi:10.5281/zenodo.3269922.
- [HUniversityKuopioc] Jouni Hiltunen and University of Kuopio. Lumber spectra. doi:10.5281/zenodo.3269924.
- [HB95] Po-Chieh Hung and Roy S. Berns. Determination of constant hue loci for a crt gamut and their predictions using color appearance spaces. *Color Research & Application*, 20(5):285–295, October 1995. doi:10.1002/col.5080200506.
- [JH19] Wenzel Jakob and Johannes Hanika. A low-dimensional function space for efficient spectral upsampling. *Computer Graphics Forum*, 38(2):147–155, May 2019. doi:10.1111/cgf.13626.
- [JLGS13] Jun Jiang, Dengyu Liu, Jinwei Gu, and Sabine Susstrunk. What is the space of spectral sensitivity functions for digital color cameras? In *2013 IEEE Workshop on Applications of Computer Vision (WACV)*, 168–179. IEEE, January 2013. doi:10.1109/WACV.2013.6475015.
- [LR97] M Ronnier Luo and Peter A. Rhodes. Using the lutchi colour appearance data. 1997. URL: <https://web.archive.org/web/20040212195937/http://colour.derby.ac.uk:80/colour/info/lutchi/> (visited on 2019-09-10).
- [LCR+91a] M. Ronnier Luo, Anthony A. Clarke, Peter A. Rhodes, André Schappo, Stephen A. R. Scrivener, and Chris J. Tait. Quantifying colour appearance. part i. lutchi colour appearance data. *Color Research & Application*, 16(3):166–180, June 1991. doi:10.1002/col.5080160307.
- [LCR+91b] M. Ronnier Luo, Anthony A. Clarke, Peter A. Rhodes, André Schappo, Stephen A.R. Scrivener, and Chris J. Tait. Quantifying colour appearance. part ii. testing colour mod-

- els performance using lutchi colour appearance data. *Color Research & Application*, 16(3):181–197, 1991. doi:[10.1002/col.5080160308](https://doi.org/10.1002/col.5080160308).
- [LGR+93] M. Ronnier Luo, X. Wang Gao, Peter A. Rhodes, H. John Xin, Anthony A. Clarke, and Stephen A.R. Scrivener. Quantifying colour appearance. part iii. supplementary lutchi colour appearance data. *Color Research & Application*, 18(2):98–113, 1993. doi:[10.1002/col.5080180207](https://doi.org/10.1002/col.5080180207).
- [LR99] M. Ronnier Luo and Peter A. Rhodes. Corresponding-colour datasets. *Color Research & Application*, 24(4):295–296, August 1999. doi:[10.1002/\(SICI\)1520-6378\(199908\)24:4<295::AID-COL10>3.0.CO;2-K](https://doi.org/10.1002/(SICI)1520-6378(199908)24:4<295::AID-COL10>3.0.CO;2-K).
- [MUniversityoKuopio] Elzbieta Marszalec and University of Kuopio. Agfa it8.7/2 set. doi:[10.5281/zenodo.3269926](https://doi.org/10.5281/zenodo.3269926).
- [MMT76] John J. McCann, Suzanne P. McKee, and Thomas H Taylor. Quantitative studies in retinex theory a comparison between theoretical predictions and observer responses to the "color mondrian" experiments. *Vision Research*, 16(5):445–IN3, January 1976. doi:[10.1016/0042-6989\(76\)90020-1](https://doi.org/10.1016/0042-6989(76)90020-1).
- [OUniversityoKuopio] Joni Orava and University of Kuopio. Munsell colors glossy (all) (spectrofotometer measured). doi:[10.5281/zenodo.3269918](https://doi.org/10.5281/zenodo.3269918).
- [SUniversityoKuopio] Raimo Silvennoinen and University of Kuopio. Forest colors. doi:[10.5281/zenodo.3269920](https://doi.org/10.5281/zenodo.3269920).
- [ZKT109] Hongxun Zhao, Rei Kawakami, Robby T Tan, and Katsushi Ikeuchi. Estimating basis functions for spectral sensitivity of digital cameras. 2009.
- [HautaKasariUniversityoKuopioa] Markku Hauta-Kasari and University of Kuopio. Munsell colors matt (aotf measured). doi:[10.5281/zenodo.3269914](https://doi.org/10.5281/zenodo.3269914).
- [HautaKasariUniversityoKuopiob] Markku Hauta-Kasari and University of Kuopio. Munsell colors matt (spectrofotometer measured). doi:[10.5281/zenodo.3269912](https://doi.org/10.5281/zenodo.3269912).
- [Labsphere19] Labsphere. Labsphere srs-99-020. 2019. doi:[10.5281/zenodo.3245875](https://doi.org/10.5281/zenodo.3245875).
- [OpenpyxlDevelopers19] Openpyxl Developers. Openpyxl. 2019. URL: <https://bitbucket.org/openpyxl/openpyxl/>.
- [XRite16] X-Rite. New color specifications for colorchecker sg and classic charts. 2016. URL: http://xritephoto.com/ph_product_overview.aspx?ID=938\T1\textbackslash{}&Action=Support\T1\textbackslash{}&SupportID=5884\T1\textbackslash{}# (visited on 2018-10-29).

Symbols

`__init__()` (*colour_datasets.sandbox method*), 35
`__init__()` (*colour_datasets.utilities.suppress_stdout method*), 44

A

`AbstractDatasetLoader` (class in *colour_datasets.loaders*), 8

B

`build_AgfaIT872Set()` (in *colour_datasets.loaders*), 11
`build_Asano2015()` (in *colour_datasets.loaders*), 31
`build_Brendel2020()` (in *colour_datasets.loaders*), 23
`build_Dyer2017()` (in *colour_datasets.loaders*), 33
`build_Ebner1998()` (in *colour_datasets.loaders*), 15
`build_ForestColors()` (in *colour_datasets.loaders*), 18
`build_Hung1995()` (in *colour_datasets.loaders*), 14
`build_Jakob2019()` (in *colour_datasets.loaders*), 10
`build_Jiang2013()` (in *colour_datasets.loaders*), 13
`build_Labsphere2019()` (in *colour_datasets.loaders*), 21
`build_LumberSpectra()` (in *colour_datasets.loaders*), 22
`build_Luo1997()` (in *colour_datasets.loaders*), 20
`build_Luo1999()` (in *colour_datasets.loaders*), 17
`build_MunsellColorsGlossyAllSpectrofotometerMeasured()` (in *module colour_datasets.loaders*), 24
`build_MunsellColorsGlossySpectrofotometerMeasured()` (in *module colour_datasets.loaders*), 25
`build_MunsellColorsMattAOTFMeasured()` (in *module colour_datasets.loaders*), 26
`build_MunsellColorsMattSpectrofotometerMeasured()` (in *module colour_datasets.loaders*), 27
`build_PaperSpectra()` (in *module colour_datasets.loaders*), 32

`build_XRite2016()` (in *module colour_datasets.loaders*), 29
`build_Zhao2009()` (in *module colour_datasets.loaders*), 34

C

`cell_range_values()` (in *module colour_datasets.utilities*), 46
`column_to_index()` (in *module colour_datasets.utilities*), 45
`Community` (class in *colour_datasets*), 39
`Configuration` (class in *colour_datasets*), 35
`configuration` (*colour_datasets.Community* property), 40
`configuration` (*colour_datasets.Record* property), 37
`content` (*colour_datasets.loaders.AbstractDatasetLoader* property), 9

D

`data` (*colour_datasets.Community* property), 40
`data` (*colour_datasets.Record* property), 37
`DATASET_LOADERS` (in *module colour_datasets.loaders*), 8
`DatasetLoader_AgfaIT872Set` (class in *colour_datasets.loaders*), 11
`DatasetLoader_Asano2015` (class in *colour_datasets.loaders*), 29
`DatasetLoader_Brendel2020` (class in *colour_datasets.loaders*), 23
`DatasetLoader_Dyer2017` (class in *colour_datasets.loaders*), 32
`DatasetLoader_Ebner1998` (class in *colour_datasets.loaders*), 14
`DatasetLoader_ForestColors` (class in *colour_datasets.loaders*), 17
`DatasetLoader_Hung1995` (class in *colour_datasets.loaders*), 13
`DatasetLoader_Jakob2019` (class in *colour_datasets.loaders*), 9
`DatasetLoader_Jiang2013` (class in *colour_datasets.loaders*), 12
`DatasetLoader_Labsphere2019` (class in *colour_datasets.loaders*), 20
`DatasetLoader_LumberSpectra` (class in *colour_datasets.loaders*), 22

DatasetLoader_Luo1997 (class in `id (colour_datasets.Record property)`), 37
 `colour_datasets.loaders`), 18 `index_to_column()` (in module
 DatasetLoader_Luo1999 (class in `colour_datasets.utilities`), 46
 `colour_datasets.loaders`), 16 `index_to_row()` (in module
 DatasetLoader_MunsellColorsGlossyAllSpectrofotometerMeasured (class in `colour_datasets.utilities`), 45
 (class in `colour_datasets.loaders`), 24
 DatasetLoader_MunsellColorsGlossySpectrofotometerMeasured (class in `colour_datasets.loaders`), 25
 `json_open()` (in module `colour_datasets.utilities`),
 DatasetLoader_MunsellColorsMattaOTFMeasured (class in `colour_datasets.loaders`), 26
 43
 DatasetLoader_MunsellColorsMattSpectrofotometerMeasured (class in `colour_datasets.loaders`), 27
 `load()` (`colour_datasets.loaders.AbstractDatasetLoader`
 DatasetLoader_PaperSpectra (class in `method`), 9
 `colour_datasets.loaders`), 31 `load()` (`colour_datasets.loaders.DatasetLoader_Asano2015`
 DatasetLoader_XRite2016 (class in `method`), 30
 `colour_datasets.loaders`), 28 `load()` (`colour_datasets.loaders.DatasetLoader_Brendel2020`
 DatasetLoader_Zhao2009 (class in `method`), 23
 `colour_datasets.loaders`), 33 `load()` (`colour_datasets.loaders.DatasetLoader_Dyer2017`
 datasets() (in module `colour_datasets`), 42 `method`), 32
 `load()` (`colour_datasets.loaders.DatasetLoader_Ebner1998`
 `method`), 15
F `load()` (`colour_datasets.loaders.DatasetLoader_Hung1995`
 from_id() (`colour_datasets.Community static method`), 41 `method`), 13
 from_id() (`colour_datasets.Record static method`), 37 `load()` (`colour_datasets.loaders.DatasetLoader_Jakob2019`
 `method`), 10
H `load()` (`colour_datasets.loaders.DatasetLoader_Jiang2013`
 `method`), 12
 hash_md5() (in module `colour_datasets.utilities`), 44 `load()` (`colour_datasets.loaders.DatasetLoader_Labsphere2019`
 `method`), 21
I `load()` (`colour_datasets.loaders.DatasetLoader_Luo1997`
 `method`), 19
 ID (`colour_datasets.loaders.AbstractDatasetLoader`
 `attribute`), 8 `load()` (`colour_datasets.loaders.DatasetLoader_Luo1999`
 `method`), 16
 id (`colour_datasets.loaders.AbstractDatasetLoader`
 `property`), 8 `load()` (`colour_datasets.loaders.DatasetLoader_XRite2016`
 `method`), 28
 ID (`colour_datasets.loaders.DatasetLoader_Asano2015`
 `attribute`), 30 `load()` (`colour_datasets.loaders.DatasetLoader_Zhao2009`
 `method`), 34
 ID (`colour_datasets.loaders.DatasetLoader_Brendel2020`
 `attribute`), 23 `load()` (in module `colour_datasets`), 7
 ID (`colour_datasets.loaders.DatasetLoader_Dyer2017`
 `attribute`), 32
P
 ID (`colour_datasets.loaders.DatasetLoader_Ebner1998`
 `attribute`), 15 `parse_workbook_Asano2015()`
 (`colour_datasets.loaders.DatasetLoader_Asano2015`
 `static method`), 30
 ID (`colour_datasets.loaders.DatasetLoader_Hung1995`
 `attribute`), 13 `pull()` (`colour_datasets.Community method`), 41
 ID (`colour_datasets.loaders.DatasetLoader_Jakob2019`
 `attribute`), 10 `pull()` (`colour_datasets.Record method`), 38
R
 ID (`colour_datasets.loaders.DatasetLoader_Jiang2013`
 `attribute`), 12 `Record` (class in `colour_datasets`), 36
 ID (`colour_datasets.loaders.DatasetLoader_Labsphere2019`
 `attribute`), 21 `Record` (`colour_datasets.loaders.AbstractDatasetLoader`
 `property`), 8
 ID (`colour_datasets.loaders.DatasetLoader_Luo1997`
 `attribute`), 19 `records` (`colour_datasets.Community property`), 40
 ID (`colour_datasets.loaders.DatasetLoader_Luo1999`
 `attribute`), 16 `remove()` (`colour_datasets.Community method`), 42
 `remove()` (`colour_datasets.Record method`), 39
 ID (`colour_datasets.loaders.DatasetLoader_XRite2016`
 `attribute`), 28 `repository` (`colour_datasets.Community property`),
 40
 ID (`colour_datasets.loaders.DatasetLoader_Zhao2009`
 `attribute`), 34 `repository` (`colour_datasets.Record property`), 37
 `row_to_index()` (in module
 `colour_datasets.utilities`), 45

S

`sandbox` (class in `colour_datasets`), [35](#)

`suppress_stdout` (class in `colour_datasets.utilities`),
[44](#)

`sync()` (`colour_datasets.loaders.AbstractDatasetLoader`
method), [9](#)

`synced()` (`colour_datasets.Community` method), [41](#)

`synced()` (`colour_datasets.Record` method), [38](#)

T

`title` (`colour_datasets.Record` property), [37](#)

U

`url_download()` (in module
`colour_datasets.utilities`), [44](#)

`use_sandbox()` (in module `colour_datasets.records`),
[36](#)