

# smart-chart

## Color and Appearance data in one QC management system

All critical color and appearance parameters can be saved and analyzed with one software package, smart-chart.

- **Multi-angle color and effect control with BYK-mac**
- **Orange peel and Distinctness-of-Image measurement with wave-scan**
- **Objective mottling analysis with the new cloud-runner**

It is smart in more than one way. 6 different apps let you set up a state-of-the-art color & appearance management system.

## Standard Management - manage an unlimited number of colors

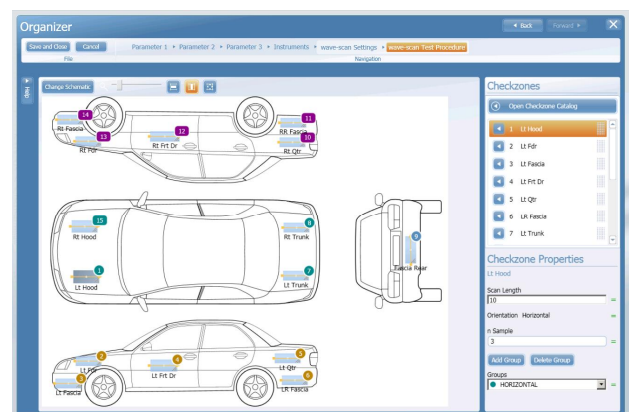
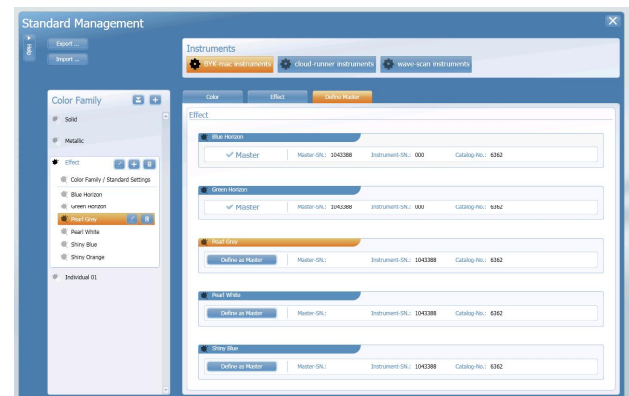
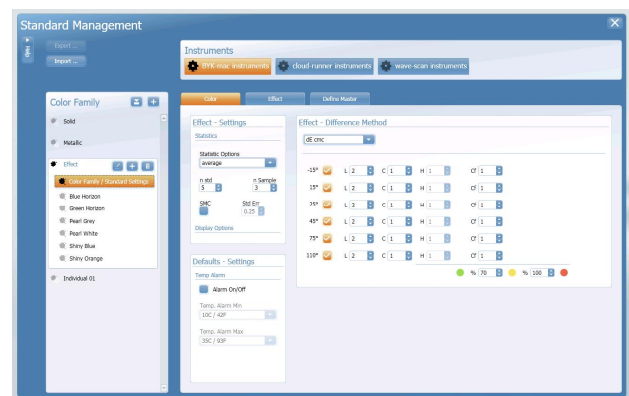
smart-chart includes powerful standard management for defining all essential color and appearance control parameters with Pass / Fail tolerances. Customer specific color and appearance scales for major automotive makers are already predefined and ensure color and appearance control according to their internal specifications.

## Digital Standard - guarantees a seamless workflow

Thanks to the outstanding inter-instrument agreement of BYK-mac - proven by all automotive makers and unsurpassed in the industry - smart-chart enables you to use "digital standards" on a global basis with your entire supply chain. Export and import your color standards in xml file format and send them by email to your supply chain. Thus, color control data are reliable and communication among all parties is seamless and efficient.

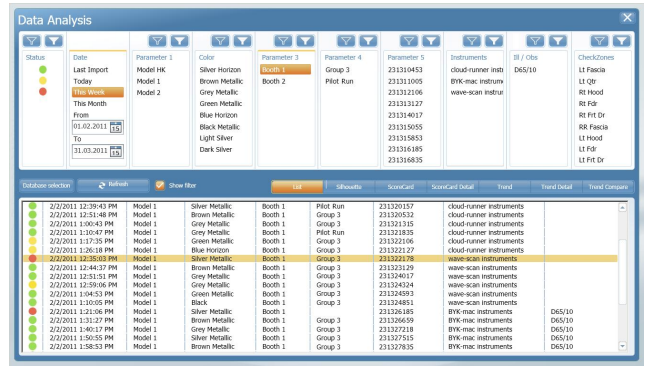
## Organizer Set-up - standardized measurement and sample labeling

smart-chart offers set-up of Organizers for clear sample identification and a menu guided operation on the instrument. Product schematics help to define specific sampling procedures. The entered parameters can be used for filtering the measured data saved in the database. Typical identifiers are model, color or product ID - smart-chart is open for your specific needs.



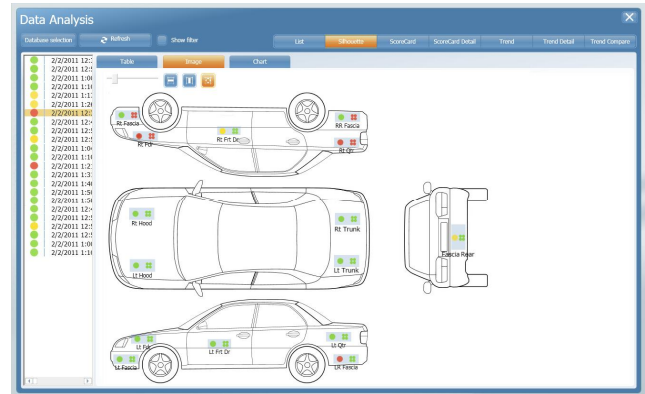
# Data Analysis - green light for shipping

Data analysis was never easier. The data are saved in a SQL database which allows handling of large data sets over a long time period. See all your test series at once based on your specific criteria. Select filter criteria, such as a certain time range, a specific color and all "green" or "yellow" or "red" test series for further analysis.



# Data analysis - Detailed measurement reports

View and open the measurement data of a single test series with a click. The product schematic quickly shows you where the "problem areas" are. The data is also displayed in an easy-to-read data table highlighting the measurements out of specifications.

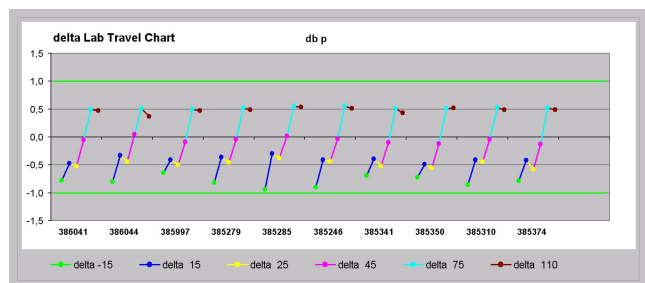


Additionally to the individual test results per check zone, the averages of groups (horizontal or verticals) are calculated and shown on top of the report. For color harmony analysis the difference of each check zone to the master standard and the differences between "panel matches" as defined in the organizer are displayed.

# Monitor your process and document stability

Innovative data analysis reports feature scorecards with drill-down functionality as well as trend reports for all measured parameters. They are so easy to set up that statistical analysis actually becomes a fun project. And the data is documented and analyzed all together for color and appearance. Valuable time for data crunching will be saved and lengthy discussions analyzing the data will no longer be necessary.

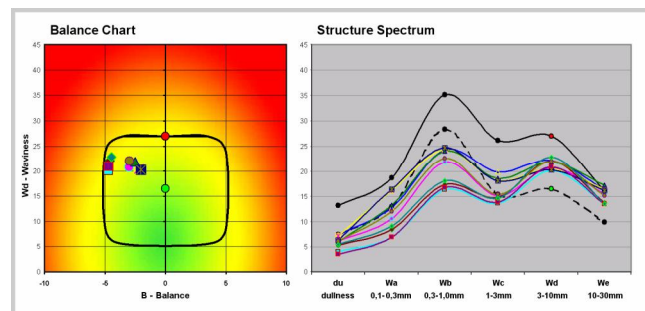
Score Card		Color: Shiny Gray			Model: Sport Sedan			Line: Booth 1		
Checkzone	dE p -15	dE p 15	dE p 25	dE p 45	dE p 75	dE p 110	dS p 15	dS p 45	dS p 75	dG p
Hood Rgt	1.22	0.87	0.76	0.51	0.53	0.47	0.39	1.28	0.78	-0.24
Hood Lft	1.58	1.28	0.80	0.44	0.85	0.52	0.59	1.76	1.14	0.51
Fender Lft	1.51	1.77	1.29	0.40	0.54	0.47	0.54	0.48	1.43	0.23
Fr Fascia Lft	0.99	0.72	1.13	0.23	0.64	0.54	0.29	1.29	0.94	0.30
Door Lft	1.39	0.85	0.91	0.38	0.53	0.49	0.21	0.82	1.12	0.17
Qtr Lft	1.74	1.04	1.21	0.24	0.58	0.51	0.33	1.83	1.12	0.31
Rr Fascia Lft	1.57	0.87	1.11	0.32	0.58	0.50	0.54	0.94	0.92	0.42
Rr Fascia Rgt	0.87	0.97	0.96	0.41	0.95	0.48	0.62	1.58	1.28	0.70
Qtr Rgt	1.88	1.71	1.45	0.50	0.50	0.46	0.55	1.64	1.81	-0.25
Door Rgt	1.62	1.37	1.05	0.30	0.56	0.45	0.86	1.78	1.21	1.08
Fender Rgt	1.62	0.95	1.24	0.33	0.53	0.48	0.45	1.53	1.16	0.08
Fr Fascia Rgt	1.78	1.20	1.10	0.28	0.55	0.48	0.37	1.22	0.95	0.02



# wave-scan Balance-Chart

The Balance chart shows all important info in one report:

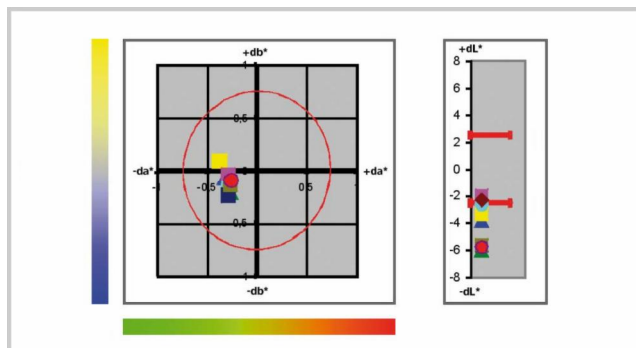
- Customer specifications
- Balance chart for visual correlation
- Structure spectrum for optimization



## BYK-mac Color Harmony and Process Control Chart

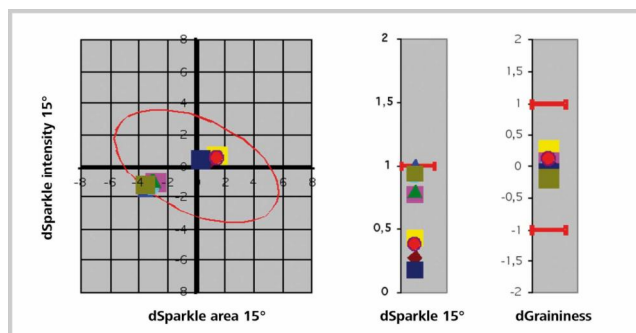
### Lab-Scatter Graph

This standard report shows at a glance whether all parts are within specification. One graph per angle is shown and different tolerance models (e.g. CMC, DIN 6175-2) can be selected.



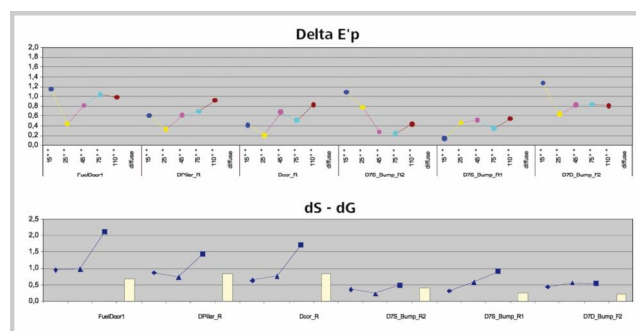
### Effect Graph

Similar to the Lab-scatter graph, this chart easily shows whether effect differences are within tolerance. One graph per sparkle angle and graininess is displayed. Tolerances can be set to your specific requirements.



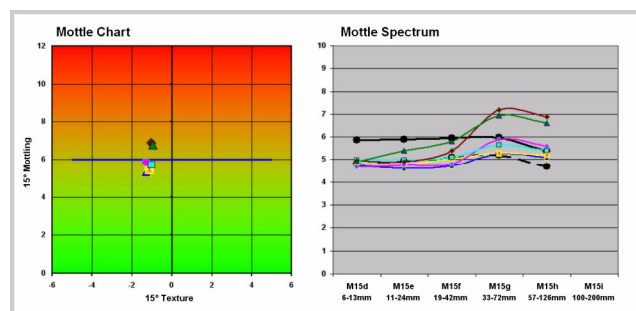
### Color & Effect Travel by Sample

...the ideal tool to show how individual measurement areas or colors perform per measurement angle. In combination with a graph for sparkle and graininess values, total color impression can be easily controlled.



### cloud-runner Mottle-Chart

Customer relevant limits for mottling can be defined by setting limits for the Mottling indices. The measured data is displayed in a two-dimensional chart with red - yellow - green ranges for easy process control. In addition, the mottle spectrum gives more detailed information for optimization and trouble shooting.



With smart-chart, you'll know where you are, where you're going, and how to get there.

## Ordering Information

Cat. No.	Description
----------	-------------

AW-4831	smart-chart
---------	-------------

**Comes complete with:** Software on CD-ROM

**Note:** smart-chart licence fee for more than two installations is quantity dependent. Please contact your local BYK-Gardner representative.

### System Requirements:

Operating system 32-bit: Windows® XP SP3, Vista SP2 or Windows 7 SP1

Microsoft .NET Framework 4

Excel® version: 2003 or 2007, incl. VBA

Hardware: Core 2 Duo, 2.2 GHz, or equivalent

Memory: 2 GB RAM

Hard-disk space: min. 100 MB

Monitor resolution: 1280 x 1024 Pixel or higher

Disk drive: CD-ROM or DVD drive

Interface: free USB-port

## Technical Specifications

Software for professional analysis and documentation of color and appearance

Instruments

wave-scan dual, wave-scan II  
BYK-mac, BYK-mac COLOR  
cloud-runner

Export/Import

Color Standards (.xml format)  
Organizer (.xml format)

Database format

SQL Server Compact

Languages

Chinese, English, French, German, Italian,  
Japanese, Spanish