

LED MODULES

LUGA SHOP GEN. 8
2000 LM TO 17,500 LM



LUGA SHOP GEN. 8 – RETAIL, INDUSTRIAL AND STREET LIGHTING

Typical Applications

DMS1208J***

- Integration in reflector luminaires
- Retail lighting
- Downlights

DMS1212J*** / DMS1812J***

- Integration in outdoor and street luminaires
- Industrial lighting for:
 - Production halls
 - Warehouses
- Petrol station lighting
- Lighting for sports facilities

LUGA Shop Gen. 8

- **LONG SERVICE LIFETIME: UP TO 100,000 HOURS**
- **NARROW COLOUR TOLERANCES:
3 STEP MACADAM (CRI >80/>90)**
- **HIGHLY EFFICIENT: UP TO 198 LM/W**
- **INCREASED EFFICIENCY FOR CRI > 90**
- **SPECIAL COLOURS:
FOOD, PEARL WHITE AND CLEAR WHITE**

LUGA Shop Gen. 8 – – DMS 1208

Technical Notes

- LED module for integration into luminaires
- Dimensions: 19x19 mm
- Light emitting surface (LES): Ø 14 mm
- Typ. beam angle: 120°
- Use of external LED constant current driver



Electrical Characteristics

at $t_p = 65^\circ\text{C}$

Type	Typ. voltage DC					Typ. power consumption				
	350 mA V	500 mA V	700 mA V	1050 mA V	1400 mA V	350 mA W	500 mA W	700 mA W	1050 mA W	1400 mA W
DMS1208J-xxx	32.4	33.0	33.8	35.0	36.2	11.3	16.5	23.6	36.8	50.6

Voltage and power tolerance: $\pm 10\%$

Maximum Ratings

Exceeding the maximum ratings can lead to reduction of service life or destruction of the modules.

Type	Operating current mA	Operation temperature range at t_c point			Ambient temperature range		Storage temperature range		Max. allowed repetitive peak current mA	
		$^\circ\text{C}$ min.	$^\circ\text{C}$ max.	at LES surface $^\circ\text{C}$ max.	$^\circ\text{C}$ min.	$^\circ\text{C}$ max.	$^\circ\text{C}$ min.	$^\circ\text{C}$ max.		
DMS1208J-xxx	500	-40	+120	+180	-40	+40	-40	+105	1560	
	700									+110
	1050									+100
	1400									+80

Operating Life

at $t_p = 65^\circ\text{C}$

Lumen maintenance	350 mA in hours	500 mA in hours	700 mA in hours	1050 mA in hours	1400 mA in hours
DMS1208J-xxx (at I_f)					
L90/B10	89,000	89,000	83,000	71,000	58,000
L80/B10	> 100,000	> 100,000	> 100,000	> 100,000	> 100,000
L70/B10	> 100,000	> 100,000	> 100,000	> 100,000	> 100,000

Optical Characteristics

at $t_p = 65^\circ\text{C}$

Type	Ref. No.	Colour	Correlated colour temperature* K	Typ. luminous flux** and efficiency at										Typ. CRI R_g	Photo- metric code
				350 mA		500 mA		700 mA		1050 mA		1400 mA			
				lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W		
DMS1208J-827	570904	warm white	2700	1926	170	2692	163	3659	155	5197	141	6535	129	82	827/349
DMS1208J-830	570905	warm white	3000	1973	174	2757	167	3747	158	5323	145	6694	132	82	830/349
DMS1208J-830B	570906	warm white	3000 (below BBI)	1980	175	2768	168	3762	159	5344	145	6720	133	82	830/349
DMS1208J-835	570909	neutral white	3500	1995	176	2788	169	3790	160	5383	146	6770	134	82	835/349
DMS1208J-840	570910	neutral white	4000	2056	181	2873	174	3905	165	5547	151	6976	138	82	840/349
DMS1208J-850	570911	cool white	5000	2052	181	2869	174	3899	165	5539	151	6965	138	82	850/349

* Colour tolerance: 3 MacAdam (CRI > 80); 2 MacAdam on request | ** Production tolerance of luminous flux and efficiency: $\pm 10\%$ | Min. CRI R_g : > 80

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

LUGA Shop Gen. 8 – DMS 1208 – Pearl White / Clear White

Optical Characteristics

at $t_p = 65\text{ °C}$

Type	Ref. No.	Colour	Correlated colour temperature* K	Typ. luminous flux** and efficiency at										Typ. CRI R _a	Photo-metric code		
				350 mA		500 mA		700 mA		1050 mA		1400 mA					
				lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W		
DMS1208J-831PW	570907	pearl white	3100	1998	176	2794	169	3797	160	5393	147	6782	134	82	831/349		
DMS1208J-832CW	570908	clear white	3200	1996	176	2790	169	3792	160	5386	146	6773	134	82	832/349		
DMS1208J-931PW	570914	pearl white	3100	1734	153	2424	147	3294	139	4678	127	5884	116	92	931/349		
DMS1208J-932CW	570915	clear white	3200	1765	156	2467	149	3353	142	4763	130	5989	118	92	932/349		

* Colour tolerance: 3 MacAdam; 2 MacAdam on request | ** Production tolerance of luminous flux and efficiency: $\pm 10\%$ | Min. CRI R_a: $> 90 / > 80$

LUGA Shop Gen. 8 – DMS 1208 – HiCRI

Optical Characteristics

at $t_p = 65\text{ °C}$

Type	Ref. No.	Colour	Correlated colour temperature* K	Typ. luminous flux** and efficiency at										Typ. CRI R _a	Photo-metric code		
				350 mA		500 mA		700 mA		1050 mA		1400 mA					
				lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W		
DMS1208J-927	570912	warm white	2700	1620	143	2264	137	3077	130	4370	119	5496	109	92	927/349		
DMS1208J-930	570913	warm white	3000 (below BBL)	1703	150	2380	144	3235	137	4594	125	5778	114	92	930/349		
DMS1208J-935	570916	neutral white	3500 (below BBL)	1791	158	2503	152	3402	144	4833	131	6077	120	92	935/349		
DMS1208J-940	570917	neutral white	4000 (below BBL)	1806	159	2525	153	3432	145	4875	133	6130	121	92	940/349		

* Colour tolerance: 3 MacAdam; 2 MacAdam on request | ** Production tolerance of luminous flux and efficiency: $\pm 10\%$ | Min. CRI R_a: > 90

LUGA Shop Gen. 8 – DMS 1208 – Food

Optical Characteristics

at $t_p = 65\text{ °C}$

Type	Ref. No.	Colour	Correl. colour temperature* K	Typ. luminous flux** and efficiency at										Typ. CRI R _a	Photo-metric code		
				350 mA		500 mA		700 mA		1050 mA		1400 mA					
				lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W		
DMS1208J-MP	570918	"pink effect"	2000	980	86	1369	83	1861	79	2643	72	3324	66	82	820/349		
DMS1208J-MW	570919	"white effect"	4000	1057	93	1477	89	2007	85	2851	78	3586	71	70 (sp. Spek: HiGa)	740/349		

* Colour tolerance: 3 MacAdam; 2 MacAdam on request | ** Production tolerance of luminous flux and efficiency: $\pm 10\%$

Typical Applications

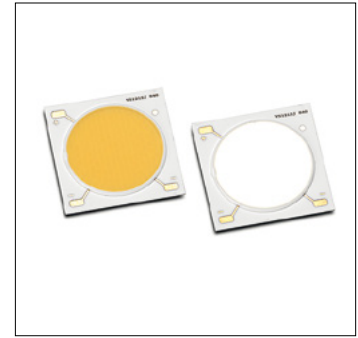
DMS1208J-MP 570918 "pink effect"	DMS1208J-MW 570919 "white effect"
• Meat	• Meat

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LUGA Shop Gen. 8 – DMS 1212/DMS 1812

Technical Notes

- LED module for integration into luminaires
- Dimensions: 28x28 mm
- Light emitting surface (LES): Ø 22 mm
- Typ. beam angle: 120°
- Use of external LED constant current driver



Electrical Characteristics

at $t_p = 65^\circ\text{C}$

Type	Typ. voltage DC					Typ. power consumption				
	700 mA V	1050 mA V	1400 mA V	1700 mA V	2100 mA V	700 mA W	1050 mA W	1400 mA W	1700 mA W	2100 mA W
DMS1212J-xxx	32.9	33.8	34.7	35.4	36.3	23.0	35.5	48.6	60.1	76.2
DMS1812J-xxx	49.3	50.6	51.9	52.9	54.2	34.5	53.2	72.6	89.9	113.8

Voltage and power tolerance: $\pm 10\%$

Maximum Ratings

Exceeding the maximum ratings can lead to reduction of service life or destruction of the modules.

Type	Operating current mA	Operation temperature range at t_c point			Ambient temperature range		Storage temperature range		Max. allowed repetitive peak current mA
		$^\circ\text{C min.}$	$^\circ\text{C max.}$	at LES surface $^\circ\text{C max.}$	$^\circ\text{C min.}$	$^\circ\text{C max.}$	$^\circ\text{C min.}$	$^\circ\text{C max.}$	
DMS1212J-xxxx	<700	-40	+115	+180	-40	+40	-40	+105	2500
	1050		+110						
	1400		+100						
	1700		+95						
	2100		+85						
DMS1812J-xxxx	<700	-40	+115	+180	-40	+40	-40	+105	2400
	1050		+110						
	1400		+100						
	1700		+95						
	2100		+85						

Operating Life

at $t_p = 65^\circ\text{C}$

Lumen maintenance	700 mA in hours	1050 mA in hours	1400 mA in hours	1700 mA in hours	2100 mA in hours
DMS1212J-xxxx (at I_f)					
L90/B10	90,000	83,000	75,000	67,000	58,000
L80/B10	> 100,000	> 100,000	> 100,000	> 100,000	> 100,000
L70/B10	> 100,000	> 100,000	> 100,000	> 100,000	> 100,000
DMS1812J-xxxx (at I_f)					
L90/B10	87,000	81,000	73,000	67,000	58,000
L80/B10	> 100,000	> 100,000	> 100,000	> 100,000	> 100,000
L70/B10	> 100,000	> 100,000	> 100,000	> 100,000	> 100,000

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LUGA Shop Gen. 8 – DMS 1212/DMS 1812

Optical Characteristics

at $t_p = 65^\circ\text{C}$

Type	Ref. No.	Colour	Correlated colour temperature* K	Typ. luminous flux** and efficiency at										Typ. CRI R _a	Photo-metric code
				700 mA		1050 mA		1400 mA		1700 mA		2100 mA			
				lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W		
DMS1212J-827	570920	warm white	2700	3891	169	5641	159	7266	150	8558	142	10133	133	82	827/349
DMS1212J-830	570921	warm white	3000	4102	178	5947	167	7661	158	9023	150	10684	140	82	830/349
DMS1212J-830B	570922	warm white	3000 (below BBL)	4027	175	5838	164	7521	155	8858	147	10488	138	82	830/349
DMS1212J-835	570925	neutral white	3500	4074	177	5906	166	7607	157	8960	149	10609	139	82	835/349
DMS1212J-840	570926	neutral white	4000	4218	183	6115	172	7878	162	9279	154	10986	144	82	840/349
DMS1212J-850	570927	cool white	5000	4246	184	6155	173	7929	163	9339	155	11057	145	82	850/349
DMS1212J-740	570928	neutral white	4000	4481	195	6496	183	8368	172	9857	164	11671	153	72	740/349
DMS1212J-750	570929	cool white	5000	4512	196	6541	184	8426	174	9924	165	11751	154	72	750/349
DMS1812J-830	570938	warm white	3000	5884	170	8508	160	10934	151	12854	143	15180	133	82	830/349
DMS1812J-840	570939	neutral white	4000	6050	175	8747	165	11242	155	13215	147	15606	137	82	840/349
DMS1812J-850	570940	cool white	5000	6244	181	9027	170	11602	160	13640	152	16107	142	82	850/349
DMS1812J-740	570941	neutral white	4000	6436	186	9304	175	11959	165	14058	156	16601	146	72	740/349
DMS1812J-750	570942	cool white	5000	6399	185	9251	174	11890	164	13978	155	16507	145	72	750/349

* Colour tolerance: 3 MacAdam (CRI > 80); 2 MacAdam on request | ** Production tolerance of luminous flux and efficiency: $\pm 10\%$ | Min. CRI R_a: > 80/> 65

LUGA Shop Gen. 8 – DMS 1212 Pearl White / Clear White

Optical Characteristics

at $t_p = 65^\circ\text{C}$

Type	Ref. No.	Colour	Correl. colour temperature* K	Typ. luminous flux** and efficiency at										Typ. CRI R _a	Photo-metric code
				700 mA		1050 mA		1400 mA		1700 mA		2100 mA			
				lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W		
DMS1212J-831PW	570923	pearl white	3100	4055	176	5878	165	7572	156	8918	148	10560	139	82	831/349
DMS1212J-832CW	570924	clear white	3200	4041	175	5858	165	7546	155	8888	148	10524	138	82	832/349
DMS1212J-931PW	570932	pearl white	3100	3481	151	5047	142	6501	134	7657	127	9066	119	92	931/349
DMS1212J-932CW	570933	clear white	3200	3502	152	5076	143	6539	135	7702	128	9120	120	92	932/349

* Colour tolerance: 3 MacAdam; 2 MacAdam on request | ** Production tolerance of luminous flux and efficiency: $\pm 10\%$ | Min. CRI R_a: > 90 / > 80

LUGA Shop Gen. 8 – DMS 1212 – HiCRI

Optical Characteristics

at $t_p = 65^\circ\text{C}$

Type	Ref. No.	Colour	Correlated colour temperature* K	Typ. luminous flux** and efficiency at										Typ. CRI R _a	Photo-metric code
				700 mA		1050 mA		1400 mA		1700 mA		2100 mA			
				lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W		
DMS1212J-927	570930	warm white	2700	3345	145	4849	137	6246	129	7357	122	8711	114	92	927/349
DMS1212J-930	570931	warm white	3000 (below BBL)	3447	150	4997	141	6437	133	7582	126	8977	118	92	930/349
DMS1212J-935	570934	neutral white	3500 (below BBL)	3554	154	5152	145	6636	137	7816	130	9255	121	92	835/349
DMS1212J-940	570935	neutral white	4000 (below BBL)	3649	158	5289	149	6813	140	8025	133	9502	125	92	840/349

* Colour tolerance: 3 MacAdam; 2 MacAdam on request | ** Production tolerance of luminous flux and efficiency: $\pm 10\%$ | Min. CRI R_a: > 90

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LUGA Shop Gen. 8 – DMS 1212 – Food

Optical Characteristics

at $t_p = 65\text{ °C}$

Type	Ref. No.	Colour	Correl. colour temperature* K	Typ. luminous flux** and efficiency at										Typ. CRI R _a	Photo-metric code
				700 mA		1050 mA		1400 mA		1700 mA		2100 mA			
				lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W		
DMS1212J-MP	570936	"pink effect"	2000	1988	86	2882	81	3712	76	4372	73	5177	68	82	820/349
DMS1212J-MW	570937	"white effect"	4000	2138	93	3099	87	3992	82	4702	78	5568	73	70 (sp. spec.: HiGa)	740/349

* Colour tolerance: 3 MacAdam; 2 MacAdam on request | ** Production tolerance of luminous flux and efficiency: $\pm 10\%$

Typical Applications

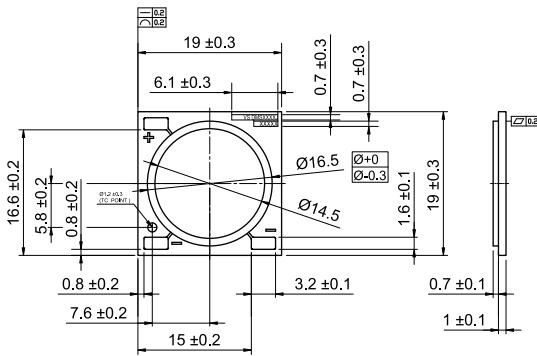
DMS1212J-MP 570936 "pink effect"	DMS1212J-MW 570937 "white effect"
• Meat	• Meat

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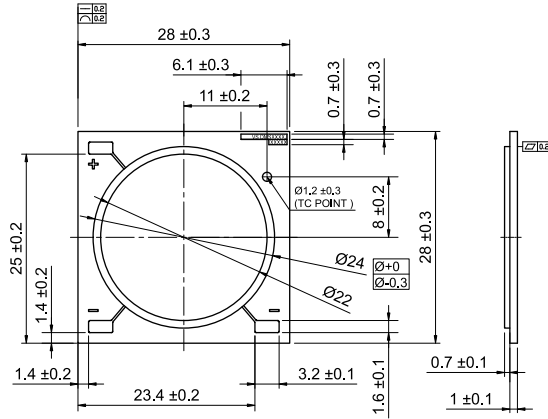
LUGA Shop Gen. 8

Mechanical Dimensions

DMS1208



DMS1212 / DMS1812

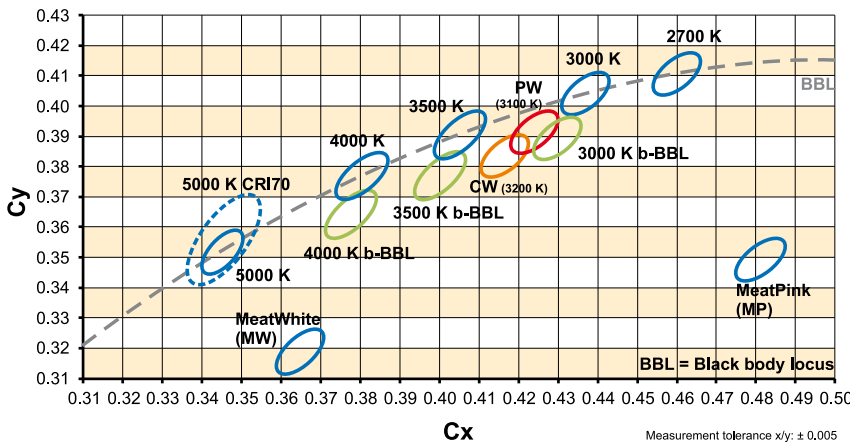


The clearance and creepage distances are designed for working voltages up to:

Type	Basic insulation	Reinforced insulation
DMS1208	235 V DC	60 V DC
DMS1212/DMS1812	330 V DC	175 V DC

Thickness of PCB is included in calculation.

Bins LUGA Shop



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LUGA Shop Gen. 8

Assembly and Safety Information

Installation must be carried out under observation of the relevant regulations and standards. The LED modules are designed for operation within a casing or luminaire. Installation must be carried out in a voltage-free state (i.e. disconnection from the mains). The following advice must be observed; non-observance can result in the destruction of the LED assembly modules, fire and/or other hazards.

- ESD (electrostatic discharge) protection measures must be observed when handling and installing the LED modules. See VS's application notes on ESD protection.
- LED assembly modules must not be subjected to any undue mechanical stress, e. g.:
 - do not treat as bulk cargo
 - avoid shear and compressive forces during handling and installation
 - do not damage circuit paths
 - do not touch the yellow phosphorus layer
- The module must be fixed onto a thermally conductive surface.
- Safe operation only possible by the use of external constant current sources (I_{max} . see table "Electrical Characteristics").
- Operation only with power supply units that feature the following protection:
 - Short-circuit protection
 - Overload protection
 - Overheating protection
 - SELV (Safety Extra Low Voltage); $U_{max} \leq 60$ V
 - I_{max} . (see table "Maximum Ratings") must not be exceeded.
- When operating devices will be selected care has been taken to ensure that the maximum values (see table "Maximum Ratings") will not be exceeded.
- Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- Safety regulations acc. to EN 60598 (or further standards) has to be observed if the maximum output voltage exceed the permitted touchable value.
- Measurement tolerances:
 - luminous flux: ± 7 %
 - voltage: ± 3 %
 - CRI: ± 1 %
- Maximum allowed number of switching cycles: 15,000
- A parallel connection of the modules is not allowed.
- To ensure problem-free operation, the specified maximum temperature at the t_c point (see "Operating Life") must be observed (and measured in accordance with EN 60598-1). To satisfy this point, it may be necessary to put measures in place to ensure any heat is dissipated from the PCB to the environment.

- In the event of outdoor applications or applications in damp locations, care must be taken to protect LED assembly modules against humidity, splashes and jets of water. Any corrosion damage resulting from humidity or contact with condensation will not be recognised as a defect or manufacturing fault. LED assembly modules are not specially protected against foreign bodies or dust. Depending on the type of application, further protection must be ensured to prevent dust and foreign bodies from entering.
- Operating LED modules in the presence of certain chemical substances or in chemically enriched (aggressive) environments can impair module functionality or even cause total module failure. Such conditions may occur e.g. in industry and street environments. Detailed information can be found in our "Chemical Incompatibility" PDF on our website www.vossloh-schwabe.com
- The photobiological safety of the LED modules must be classified into risk groups in accordance with EN 62471 Rating in accordance with IEC / TR 62778: risk group 1 Except the following products above the mentioned luminous flux values are classified into risk group 2.



Border condition of risk group 2

Product type	Luminous flux (lm)
DMS1208j-840	4475
DMS1208j-850	4112
DMS1208j-940	3932
DMS1208j-MW	2117
DMS1212j-740	5718
DMS1212j-750	5288
DMS1212j-840	5383
DMS1212j-850	4976
DMS1212j-940	4655
DMS1212j-MW	2506
DMS1812j-740	10678
DMS1812j-750	9808
DMS1812j-840	10038
DMS1812j-850	9516

Assessment in acc. with IEC/TR 62778:

Given a clearance of more than d_{min} , within which the lighting intensity limit of E_{thr} = see table is attained, the classification goes down to Risk Group 1.

Module type	Colour type	$E_{threshold}$ (lx)
DMS1208j	≥ 4000 K	1214
DMS1212j	≥ 4000 K	1214
DMS1812j	≥ 4000 K	1214

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LUGA Shop Gen. 8

Product Guarantee

- 5 years
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com).
We will be happy to send you these conditions upon request.

Accessories

Reflectors:

- ACL-Lichttechnik GmbH
www.reflektor.com
- ALMECO Group
www.almecogroup.com
- Jordan Luxar GmbH & Co. KG
www.jordan-luxar.de
- JORDAN REFLEKTOREN GmbH & Co. KG
www.jordan-reflektoren.de
- LEDIL
www.ledil.com

Heat sinks with active cooling:

- AVC
www.avc-europa.de
- Nuventix, Inc.
www.nuventix.com
- Sunon
www.sunon.com
- MechaTronix
www.led-heatsink.com
- Colliance, Inc.
www.cooliance.eu

Heat sinks with passive cooling:

- AVC
www.avc-europa.de
- Fischer Elektronik GmbH & Co. KG
www.fischerelektronik.de
- Frigo Dynamics
www.frigodynamics.com
- MechaTronix
www.led-heatsink.com

LED Constant Current Drivers

Please visit our homepage for details for suitable
LED constant current drivers: www.vossloh-schwabe.com

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