

TUBELED_25 RGBW

Vendor ID	1749 (0x06d5)
Vendor Name	LED2WORK GmbH.
Vendor Text	Intelligence in Light
Vendor URL	https://www.led2work.com/de/



Features

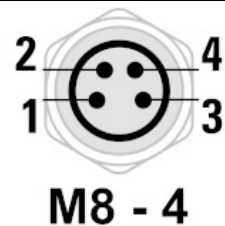
Block parameters	yes
Data Storage	yes
Profile Characteristic	Common Profile (0x4000)

Communication

IO-Link revision	V1.1
Transmission rate	38400 bit/s (COM2)
Minimum cycle time	2.5 ms
SIO Mode Supported	no
Process Data	PDout 3 bytes / PDin 0 bytes

Connection

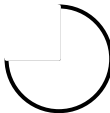
Port Class	A
Connection Type	M8 connector (A-code)
Pin 1 (BN)	L+
Pin 2 (WH)	Additional power supply
Pin 3 (BU)	L-
Pin 4 (BK)	C/Q



Overview of functions and parameters

Function	Selection	description	Parameters
Choice of color	end	No light emission	
	Color	Colored or white light	Color / White
			Color percentage (R/G/B) [%] / White (W) [%]
	Color change	Cyclically changing light color	Number of colors 2 - 4
			Sequence of colors
			Duration of color change [ms]
Dimming	Dimming	Adjustable brightness	Brightness [%]
Operating mode	Static	Permanent light	
	Flashing	Cyclical flashing	Period duration [ms]
	Flashing	Cyclical flashing	T _{ON} [ms]
			T _{OFF} [ms]
	Breathe/ Glow	Cyclical brightness change	Period duration [ms]
			Minimum value [%]

Explanation of functions and parameters

Color choice	Selection of light emission from the colors (off, white, color, color change)								
Color	Colors stored in the light. The light has 14 memory locations for colors. Plus white and off (no light). Six colors are preset (red, green, blue, yellow, orange, pink).								
		Each color can be mixed from red, green and blue. <table><tr><td>Red</td><td>Green</td><td>Blue</td></tr><tr><td>0 - 100 %</td><td>0 - 100 %</td><td>0 - 100 %</td></tr></table>		Red	Green	Blue	0 - 100 %	0 - 100 %	0 - 100 %
	Red	Green	Blue						
0 - 100 %	0 - 100 %	0 - 100 %							
	The sum of the color components may not exceed 100%. (e.g. red 70% + green 30% + blue 0%) <table><tr><td>Red</td><td>Green</td></tr><tr><td>70 %</td><td>30 %</td></tr></table>		Red	Green	70 %	30 %			
Red	Green								
70 %	30 %								
	A brightness can also be saved for white. <table><tr><td>White</td></tr><tr><td>0 - 100 %</td></tr></table>		White	0 - 100 %					
White									
0 - 100 %									
Color change	Periodic change between two, three or four colors. The colors are defined in a sequence from the saved colors. "Two colors" shows the first and second color. "Three colors" shows the first, second and third color. Four colors shows the first, second, third and fourth color.								
	 Two colors	First color							
	 Three colors	Second color							
 Four colors	Third color								
		Fourth color							
	Each color change has its own color display duration, e.g: <table><tr><td>5000 ms</td><td>1000 ms</td><td>300 ms</td></tr><tr><td>Two colors</td><td>Three colors</td><td>Four colors</td></tr></table>			5000 ms	1000 ms	300 ms	Two colors	Three colors	Four colors
5000 ms	1000 ms	300 ms							
Two colors	Three colors	Four colors							
Dimming	Setting the brightness of the light emission as a percentage. Adjustable in 100 steps.								
Static	Permanent light emission.								
Flashing	Periodic switching on and off of the light output. The period duration can be set. The On / Off ratio is set to 50% On / 50% Off.								
Flashing	Periodic switching on and off of the light output. The duration for on/off can be freely selected (standard: 100 ms on / 900 ms off).								
Breathing/ glowing	Periodic change of brightness between the set brightness and a stored minimum brightness (default: 10 %). The period duration can be set.								

Process data

Process data Out - 3 bytes

Subindex	Bit offset	Data type	Values		Name
1	16	UIntegerT (8 bit)	0	Off	Select Color
			1	White	
			2	Red	
			3	Green	
			4	Blue	
			5	Yellow	
			6	Orange	
			7	Pink	
			8	Custom Color 1	
			9	Custom Color 2	
			10	Custom Color 3	
			11	Custom Color 4	
			12	Custom Color 5	
			13	Custom Color 6	
			14	Custom Color 7	
			15	Custom Color 8	
			16	Two Colors	
			17	Three Colors	
			18	Four Colors	
2	8	UIntegerT (8 bit)	0..100		Dimming
3	0	UIntegerT (8 bit)	0	Continuous	Select Fashion
			1	Blinking	
			2	Flashing	
			3	Glowing	

Parameters

White - 1 byte - R/W

Index	Data type	Values	Name
64	UIntegerT (8 bit)	0..100	White

Colors - 3 bytes - R/W

z. e.g. Index 65 "Red"

Index	Subindex	Bit offset	Data type	Values	Standard	Name
65	1	16	UIntegerT (8 bit)	0..100	100	Red Percentage
	2	8		0..100	0	Green Percentage
	3	0		0..100	0	Blue Percentage

The sum of the 3 colors must not exceed 100% (e.g. red 70% + green 30% + blue 0%).
Otherwise the value is rejected/an error is returned.

Color indexes

Index	65	66	67	68	69	70	71
Color	Red	Green	Blue	Yellow	Orange	Pink	Custom 1

Index	72	73	74	75	76	77	78
Color	Custom 2	Custom 3	Custom 4	Custom 5	Custom 6	Custom 7	Custom 8

Color change sequence - 1 byte - R/W

z. e.g. Index 79 "First Color"

Index	Data type	Values		Name
79	UIntegerT (8 bit)	1	White	First Color
		2	Red	
		3	Green	
		4	Blue	
		5	Yellow	
		6	Orange	
		7	Pink	
		8	Custom Color 1	
		9	Custom Color 2	
		10	Custom Color 3	
		11	Custom Color 4	
		12	Custom Color 5	
		13	Custom Color 6	
		14	Custom Color 7	
		15	Custom Color 8	

Sequence of color change indexes

Index	79	80	81	82
Color	First Color	Second Color	Third Color	Fourth Color

Overview diagnosis

Type	Name	Unit
Operating hours	Total operating hours	Hours [h]
	Other operating hours	
	Service life achieved	Yes / No
Supply voltage	Voltage at L+	Millivolt [mV]
	Voltage on pin 2	
Temperature (at the light source)	Current temperature	Degrees Celsius [°C]
	Highest measured temperature	
Current power limit (power limitation and overtemperature reduction)	Powerlimit White	Percent [%]
	Powerlimit red	
	Power limit green	
	Powerlimit blue	

Diagnosis

Total operating hours - 4 bytes - RO

Index	Octet	Bit offset	Data type	Unit	Name
100	0	24	IntegerT (32 bit)	Hours [h]	Operating Hours
	1	16			
	2	8			
	3	0			

Illuminant temperature - 2 bytes - RO

Index	Octet	Bit offset	Data type	Unit	Name
101	0	8	IntegerT (16 bit)	Degrees Celsius [°C]	Temperature
	1	0			

Maximum lamp temperature - 2 bytes - RO

Index	Octet	Bit offset	Data type	Unit	Name
102	0	8	IntegerT (16 bit)	Degrees Celsius [°C]	Maximum Measured Temperature
	1	0			

Lifetime reached - 1 byte - RO

Index		Data type	Values		Name
103		UIntegerT (8 bit)	0	No	Maximum Lifetime Reached
			1	Yes	

Remaining lifetime - 4 bytes - RO

Index	Octet	Bit offset	Data type	Unit	Name
104	0	24	IntegerT (32 bit)	Hours [h]	Remaining Lifetime
	1	16			
	2	8			
	3	0			

Power limit white - 1 byte - RO

Index		Data type	Values	Name
105		UIntegerT (8 bit)	0..100	White color Power Limit

Power limit red - 1 byte - RO

Index		Data type	Values	Name
106		UIntegerT (8 bit)	0..100	Red Color Power Limit

Power limit green - 1 byte - RO

Index		Data type	Values	Name
107		UIntegerT (8 bit)	0..100	Green Color Power Limit

Power limit blue - 1 byte - RO

Index		Data type	Values	Name
108		UIntegerT (8 bit)	0..100	Blue Color Power Limit

Supply voltage L+ - 2 bytes - RO

Index	Octet	Bit offset	Data type	Unit	Name
109	0	8	IntegerT (16 bit)	Millivolt [mV]	Supply Voltage L+
	1	0			

Supply voltage pin 2 - 2 bytes - RO

Index	Octet	Bit offset	Data type	Unit	Name
110	0	8	IntegerT (16 bit)	Millivolt [mV]	Supply Voltage Pin2
	1	0			

Events

Code	Type	Name	Description
6200 (0x1838)	Error	Event 1	
6201 (0x1839)	Error	Event 2	
16912 (0x4210)	Warning	Device temperature overrun	Clear source of heat
20752 (0x5110)	Warning	Primary supply voltage overrun	Check valid voltage range
20753 (0x5111)	Warning	Primary supply voltage underrun	Check valid voltage range