




DC-0490-01.07.16

CODE: 07.936E-08-0
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 ROMANIAN ENGINEERING AND DESIGN INSTITUTE FOR OIL REFINERIES PLOIESTI - ROMANIA	MATERIAL REQUISITION		NO. 1168.00-36-6020.MR.E		REV. 00	
	ROTAMETERS		SHEET 1 OF 4			
JOB: 1168/2015 CUSTOMER: S.C. PETROTEL LUKOIL S.A. UNIT: COOLING TOWERS		REV.	DATE	BY	CH'D	APP'D
		0	05/2016	CGI	AMA	MDV
		1				
		2				
		3				
		4				
SHOP INSPECTION YES <input type="checkbox"/> NOT <input type="checkbox"/>		ATTACHMENTS				
1. VENDOR'S DRAWINGS AND DATA REQUIREMENTS						
NO. 1168.00-36-6020.MR.E SHEETS 2/4 ÷ 3/4						
2. DESIGNER REQUEST NO. 1168.00-36-6020.MR.E						
SHEET 4/4						
3. ROTAMETERS - PROJECT SPECIFICATION						
NO. 1168.00-36-6020.SP.E SHEETS 1/2 ÷ 2/2						
FURNISH AND DELIVER THE ITEMS BELOW TO: _____		MATERIAL REQUIRED AT: _____ NOT LATER THAN: _____				
ITEM No.	QUANTITY AND UNIT	SIZE AND DESCRIPTION			CODE	
1.	1 SET	VENDOR'S DRAWINGS AND DATA REQUIREMENTS ACC.				
2.		TO NO. 1168.00-36-6020.MR.E SHEETS 2/4 ÷ 3/4				
1.						
2.	1 LOT	ROTAMETERS AS PER PROJECT SPECIFICATION				
3.		NO. 1168.00-36-6020.SP.E SHEETS 1/2 ÷ 2/2				
4.						
5.	1 SET*	SPARE PARTS LIST FOR TWO YEARS OPERATION				
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
NOTES: *WILL BE CONFIRMED BY THE CUSTOMER						



175R
DRACOS, C. B. A.
Dr



MATERIAL REQUISITION ROTAMETERS

NO. 1168.00-36-6020.MR.E

REV.
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SHEET 2 OF 4

VENDOR'S DRAWINGS AND DATA REQUIREMENTS

DWG. CODE	TYPE OF DRAWINGS/DOCUMENTS DESCRIPTION	DWG. REQ'D. (YES/NOT)	REQ'D NO. OF		NO. OF WEEKS
			CD's	PRINTS	
A1	Arrangement drawings with outline dimensions including details for foundation design	-	-	-	-
B	Cross sections and lists of components	-	-	-	-
C1	Hydrostatic and leak test certificates	-	-	-	-
C2	Calibration certificates and documents	YES	1	6	6
D1	Interconnection diagrams (electrical)	-	-	-	-
D2	Wire and cable layouts	-	-	-	-
D3	Piping and instrument diagrams (P&ID)	-	-	-	-
D4	Fabrication acceptance tests (FAT) certificates	-	-	-	-
E1	Certificates & declarations of conformity (see Notes)	YES	1	3*/6	2*/6
E2	Operating instructions	YES	1	6	4
F	Assembly and installation details	YES	1	3*/6	2*/4
G	Handling drawings (weights and weight centers)	-	-	-	-
H1	List of recommended priced spare parts	YES	1	6	4
H2	Specifications	YES	1	3*/6	2*/4
J1	Material specifications	YES	1	3*/6	2*/4
J2	Calculation sheets	-	-	-	-
J3	Index of documents	YES	1	3*/6	2*/4
K	Rivet and bolt schedule	-	-	-	-
L	List of special tools and devices	-	-	-	-
M	Store instructions	YES	1	6	4
P	Shipment, installation and start up instructions	YES	1	6	4
Q	Maintenance instructions	YES	1	6	4
R	Trouble shooting manual	YES	1	6	4
T	Vendor data book	-	-	-	-
V					
W					
Z					
Y					

NOTES:

EC marking, declarations of conformity and certificates should comply with:

- Declaration of conformity PED:97/23/EC
- Certification Module H

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**MATERIAL REQUISITION
ROTAMETERS**

NO. 1168.00-36-6020.MR.E

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VENDOR'S DRAWINGS AND DATA REQUIREMENTS

INSTRUCTIONS

1. THE SUPPLY OF VENDOR DRAWINGS AND DATA CALLED FOR HEREIN SHALL BE COMPLETED BEFORE RENDERING FINAL INVOICES.
 2. DOCUMENTS SHALL SHOW EQUIPMENT NUMBERS, PURCHASE ORDER NUMBERS AND VENDOR'S OWN TITLE DRAWING AND REVISION NUMBERS, ALL IN THE LOWER HAND CORNER.
 3. DOCUMENTS SHALL BE ACCOMPANIED BY QUADRUPLICATE COPIES OF A LETTER LISTING PURCHASE ORDER NUMBERS, EQUIPMENT NUMBERS, WORK REFERENCE NUMBER, AND SHALL BE DISPATCHED (BY MAIL) IN THE FOLLOWING MANNER :
 - a) ONE COPY OF ALL DRAWINGS/DOCUMENTS AS LISTED IN THE TABLE ALONGSIDE TO THE FOLLOWING ADDRESS : **TITULAR OF THE PURCHASE ORDER**
 - b) THE REMAINING COPIES OF ALL DRAWINGS/DOCUMENTS TOGETHER WITH THE CD'S AS LISTED IN THE TABLE ALONGSIDE TO THE FOLLOWING ADDRESS:

S.C. "IPIP S.A."
18, DILIGENȚEI STR.
PLOIEȘTI-ROMÂNIA.
- ONE COPY OF ALL DRAWINGS/DOCUMENTS IN ADDITION TO THE NUMBER OF PRINTS LISTED IN THE TABLE ALONGSIDE WILL BE PACKED WITH THE EQUIPMENT / MATERIALS AS PER GENERAL PURCHASE CONDITIONS.
4. DRAWINGS OR DATA RETURNED TO VENDOR FOR REVISION SHALL BE RESUBMITTED WITHIN ONE WEEK. ALL CHANGES INCLUDED IN THE OFFER DURING REVISIONS SHALL BE CLEARLY MARKED WITH REVISION SYMBOL.
 5. CORRESPONDENCE ACCOMPANYING REVISED DRAWINGS AND DATA MUST SHOW PURCHASE ORDER NUMBER.
 6. OPERATING INSTRUCTIONS SHALL COVER ALL COMPONENTS OF THE ORDER IF THE VENDOR IS FURNISHING SIMILAR EQUIPMENT ON SEVERAL ORDERS FOR THE PROJECT, A COMPOSITE INSTRUCTION MANUAL SHALL BE PROVIDED.
 7. BUYER'S APPROVAL OF DRAWING AND DATA IS REQUIRED PRIOR TO FABRICATION.
 8. BUYER'S APPROVAL OF CERTIFIED DRAWINGS IS REQUIRED PRIOR TO SHIPMENT.
 9. EXTERN RIGHT HAND COLUMN SPECIFIES THE MAXIMUM NUMBER OF WEEKS DURING WHICH THE FINAL DRAWINGS MUST BE COMPLETED FROM THE DATE OF PURCHASE ORDER.
 10. ALL DOCUMENTS TO BE SUBMITTED IN THE ENGLISH LANGUAGE.
 11. DIMENSIONS, WEIGHTS AND MEASURES FOR DRAWINGS, ETC., TO BE METRIC UNITS.
 - 12.* DATA REQUIRED WITH BIDS.



**MATERIAL REQUISITION
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DESIGNER REQUEST

THE OFFER MUST FULLY COMPLY WITH THE PROJECT SPECIFICATIONS.

IN CASE OF DEVIATIONS FROM THE PROJECT SPECIFICATIONS, THESE DEVIATIONS SHALL BE LISTED SEPARATELY AND EXPLANATIONS INCLUDED (SEE MODEL BELOW).

NO.	SPECIFICATION NO., ARTICLE, PAGE	SPECIFIED REQUIREMENTS	DEVIATIONS	JUSTIFICATIONS


BIDDER'S NAME:

BIDDER'S SIGNATURE:

DATE:

IF THE ABOVE ARE NOT FULFILLED, THE OFFERS SHALL NOT BE TAKEN INTO CONSIDERATION.

CODE: 04.010E-11-0
NOTE: These data are confidential and the property of I.P.P.-S.A. and shall not be disclosed to others or reproduced in any manner or used for any purpose not provided an agreement, unless there is written permission of I.P.P.-S.A.

 ROMANIAN ENGINEERING AND DESIGN INSTITUTE FOR OIL REFINERIES PLOIESTI ROMANIA	PROJECT SPECIFICATION		No 1168.00-36-6020.SP.E		REV. 00	
	<div style="background-color: #90EE90; padding: 5px; display: inline-block;">ROTAMETERS</div>		SHEET 1 OF 2			
			REV.	DATE	BY	CH'D
JOB 1168/2015		0	12.05.2016	CGI	AMA	MDV
CUSTOMER S.C. PETROTEL-LUKOIL S.A.		1				
UNIT COOLING TOWERS		2				
		3				
		4				

GENERAL

- SYMBOL: See below table
- QUANTITY: 8 pcs.
- MANUFACTURER: LATER
- MODEL: LATER
- DESCRIPTION: Flow measure element
- P&ID NUMBER: 1168.00-32-2503.01
- TYPE: Rotameter (Non electrical local indicator)

TECHNICAL CHARACTERISTICS

- Mounting: On pipe
- Ambient temperature limits: min. -26.6°C, max. +39.9°C
- Degree of protection: IP65
- Process connection: Flanged, ND50 NP16, SDR11
- Flange facing: B1
- Body material: PE 100 or equivalent
- Wetted parts material: MFR. RECCOMENDATION acc to process conditions
- Range: 0÷15 m³/h
- Mounted on vertical pipe

Symbol	20-FI-001-1	20-FI-001-2	20-FI-002-1	20-FI-002-2
Fluid	Process Water (Note 2)	Process Water (Note 1)	Process Water (Note 2)	Process Water (Note 1)
Service	Flow measurement	Flow measurement	Flow measurement	Flow measurement
MAXIMUM FLOW [m ³ /h]	12	12	12	12
NORMAL FLOW [m ³ /h]	10	10	10	10
MINIMUM FLOW [m ³ /h]	5	5	5	5
Pressure: Norm/Max [barg]	6	6	6	6
Temperature: Norm/Max [°C]	38/80	38/80	38/80	38/80
Density[kg/m ³]	992.8	992.8	992.8	992.8
Viscosity [cP]	0.667	0.667	0.667	0.667
Line no.	20-50-AR-019	20-50-AR-024	20-50-AR-020	20-50-AR-025
Pipe class	PE301	PE301	PE301	PE301
PIPE (øext x thickness) [mm]	60x5.8	60x5.8	60x5.8	60x5.8





PROJECT SPECIFICATION
ROTAMETERS

No. 1168.00-36-6020.SP.E

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Symbol	20-FI-003-1	20-FI-003-2	20-FI-004-1	20-FI-004-2
Fluid	Process Water(Note 2)	Process Water(Note 1)	Process Water(Note 2)	Process Water(Note 1)
Service	Flow measurement	Flow measurement	Flow measurement	Flow measurement
MAXIMUM FLOW [m ³ /h]	12	12	12	12
NORMAL FLOW [m ³ /h]	10	10	10	10
MINIMUM FLOW [m ³ /h]	5	5	5	5
Pressure: Norm/Max [barg]	6	6	6	6
Temperature: Norm/Max [°C]	38/80	38/80	38/80	38/80
Density[kg/m ³]	992.8	992.8	992.8	992.8
Viscosity [cP]	0.667	0.667	0.667	0.667
Line no.	20-50-AR-021	20-50-AR-026	20-50-AR-022	20-50-AR-027
Pipe class	PE301	PE301	PE301	PE301
PIPE (Øext x thickness) [mm]	60x5.8	60x5.8	60x5.8	60x5.8

Note 1: Process water with acid sulphuric injection.

Note 2: Process water with hypochlorite and anticorrosion inhibitors injection

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